1965

The Professionalization of Medical Students: Social Class, Attitude, and Academic Achievement

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THE PROFESSIONALIZATION OF MEDICAL STUDENTS: SOCIAL CLASS, ATTITUDE, AND ACADEMIC ACHIEVEMENT

by

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A Dissertation Submitted to the Faculty of the
Graduate School of Loyola University
in Partial Fulfillment of the
Requirements for the Degree
of Doctor of Philosophy

January
1965

To the Sick, the Destitute, the Oppressed,

and the Forgotten Ones on the

Coastlands of Demerara--

British Guiana

M. A. F.

ACKNOWLEDGEMENTS

The writer wishes to express his special gratitude to Professor Paul Mundy, his academic adviser, who made a number of important suggestions which helped shape the orientation and the nature of this dissertation. He is most grateful to him for his continuous critical help and counsel in carrying this study through from its initial phase to its conclusion.

The writer is indebted to Dr. Edwin F. Rosinski of the Medical College of Virginia for permission to use the Medical School Attitude Inventory. This inventory was the basis for the analysis of the internalization of professional attitudes of medical respondents in the sample.

Thanks are also due to the many readers who made helpful suggestions at the initial phase of this study. These include Dr. Gordon Zahn, Simon Senior Research Fellow, University of Manchester, England; Dr. Edwin F. Rosinski, Director of Research in Medical Education, School of Medicine, Medical College of Virginia; Dr. Thomas Hale Ham, Chairman of the Committee on Medical Education, School of Medicine, Western Reserve University; Dr. John T. Cowles, President, Maurice Falk Medical Fund; Dr. Fremont James Lyden, Department of Public Administration, University of Washington, Seattle; Dr. Osler L. Peterson, Department of Preventative Medicine, Harvard University; and Dr. H. J. A. Rimoldi,

Professor of Psychology and Director of the Psychometric Laboratory, Loyola University.

To the medical students who have so graciously given their time during their freshman and sophomore years of medical school, the writer offers his thanks.

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

TABLE OF CONTENTS (CONTINUED)

TABLE OF CONTENTS (CONTINUED)

APPENDIXES Page

LIST OF TABLES

LIST OF TABLES (continued)

LIST OF TABLES (continued)

LIST OF TABLES (continued)

LIST OF TABLES (continued)

LIST OF TABLES (continued)

LIST OF TABLES (continued)

LIST OF ILLUSTRATIONS

LIST OF ILLUSTRATIONS (continued)

LIST OF ILLUSTRATIONS (continued)

CHAPTER I

INTRODUCTION

The history of the medical profession covers fifty centuries.[1] The introduction of the behavioral sciences to it is a relatively late development. A major factor in bringing the behavioral sciences into medicine has been the increasing recognition and treatment of "functional illness," those ailments without apparent physical etiology. Although Hippocrates recognized the emotional and environmental aspects of illness, the orientation of medicine has traditionally been biological or "physical".[2] Simmons and Wolff assert:

> Integration of the social disciplines with medicine has necessarily been slow to evolve. The behavioral sciences were established late and they have required a long period of incubation and growth before the findings from various branches could be fitted into a consistent and meaningful pattern of knowledge.[3]

Recognition of the value of the behavioral sciences to medicine was slow to develop. Jaco notes that the introduction of behavioral scientists into medical schools, hospital staffs, and health institutes is only recent, although increasing rapidly.

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[1]George A. Bender, Great Moments in Medicine (Detroit: Park Davis, 1961), p. 7.

[2]E. Gartly Jaco, Patients, Physicians and Illness (Glencoe: The Free Press, 1958), p. 3.

[3]Leo W. Simmons and Harold G. Wolff, Social Science in Medicine (New York: Russell Sage Foundation, 1954), pp. 11-12.

considerations to revise the long-standing medical school curriculum to include courses on human behavior and other contributions of the behavioral sciences are developing.[4]

In the medical specialty of psychiatry the belief is emerging that the behavioral sciences comprise the "basic sciences" of this specialty, in addition to the biological sciences already well established in the medical school curriculum.[5] Henry Sigerist carries this notion of the relationship between social structure (and function) and health even further. Medicine, usually regarded as a natural science, he holds, is a social science because its goal is social. He writes, "This leads us into the field of sociology from which medicine has received much information, but which is contributing more and more as it develops into a social science".[6]

In this research an examination is made of some selected empirical questions relevant to medical students in terms of social class, stress and anxiety responses, cynicism-idealism, academic achievement, subjective opinion of ability and membership in fraternity cliques. Additionally, an attempt is made to investigate whether or not there are changing values and

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[4]Jaco, p. 7.

[5]Ibid.

[6]M. I. Roemer, Henry E. Sigerist on the Sociology of Medicine (New York: M. D. Publications, Inc., 1960), p. 377.

attitudes of medical students as they move through successive phases of a status-sequence during their pre-clinical years of medical school. Attitude changes are analyzed in relation to seven specific objectives in medical education such as the respect for the dignity, self esteem and value of man.

Significance of the Research Area.--Hall asserts that "medicine, like other professions, is practiced in a network of institutions, formal organizations, and informal relationships. The medical career may be conceived as a set of more or less successful adjustments to these institutions and to the formal and informal organizations".[7]

Inherent in the notion of a profession is the commitment to the service of an ideal or superior value; at times this commitment is even evidenced in the taking of a vow. Just as the academic man is supposed to be dedicated to Truth and Knowledge, the lawyer to the service of Justice, the physician is supposed to serve the ideals set forth in his Hippocratic Oath.[8]

It is in the professional school that the outlook and values, as well as the skills and knowledge, of practitioners are first shaped by the profession.

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[7]Oswald Hall, "The Stages of a Medical Career", American Journal of Sociology, 53 (March, 1948), 327-336.

[8]Gordon C. Zahn, "The Lawyer's Role in Modern Society", Loyola Law Times, III (February, 1963), 15-16.

The medical school is conceived as a social environment in which the professional culture of medicine is transmitted to novices through distinctive social and psychological processes.[9] Robert K. Merton indicates:

> The school is regarded as a decisive middle term between the native and previously trained capacities of selected individuals and the emergence of the professional self, the identification of these individuals, by themselves and by society, as medical doctors.[10]

Pertinently to the professional culture of medicine Bloom asserts:

> The institution which has evolved within the profession of medicine for the purpose of professionalizing its recruits is the medical school . . . . . the medical school provides the social environment in which this process of social maturation takes place.[11]

The transition, from layman aspiring to be a physician to a young physician skilled in technique and certain of his part in dealing with patients in the complex setting of modern clinics and hospitals, is slow and halting.[12] Becker notes that "the

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[9]Robert K. Merton, George G. Reder, and Patricia L. Kendall, The Student-Physician: Introductory Studies In the Sociology of Medical Education (Cambridge: Harvard University Press, 1957), p. vii.

[10]Ibid.

[11]Samuel W. Bloom, "Some Implications of Studies in the Professionalization of the Physician", in Patients, Physicians Illness, (Glencoe: The Free Press, 1958), p. 321.

[12]Howard S. Becker, Blanche Geer, Everett C. Hughes and Anselm L. Strauss, Boys in White (Chicago: University of Chicago Press, 1961), p. 4.

young man finds out quite soon that he must learn first to be a medical student . . . . . and that he sees the world in a moving picture".[13] In part, the significance of this research deals with the way in which students, at various stages of their pre-clinical years in medical school, consider their social and psychological environment, of their membership within different social groups as there are associated with the stresses and anxieties of their environment and the acquiring of the knowledge and values of medicine.

Of further significance, this research provides an empirical test of the extent to which social relationships and their socio-cultural correlates persist in their influence on academic achievement in medical school. Since no previous research has been found which explored the relationship between social class and academic achievement at the level of the pre-clinical years of medical school, the present study provides further insight into the problem of inter-generational mobility and offers some indication of how persons from different socio-economic classes respond to professional medical training.

Moreover, if class differences in attitudes toward certain moral and ethical objectives of the profession are found to obtain among medical students at the pre-clinical level, this would suggest that some students experience greater difficulty than

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[13] Ibid., p. 5.

others in the internalization of these attitudes of the medical profession, even assuming intellectual ability to be constant.

If the findings of the study reported here should indicate that lower status individuals, as a consequence of their social class background, are hampered in their academic achievement during their pre-clinical years of medical school, it can be expected that their performance in the clinical years in terms of diagnosis, treatment, and prognosis of the patient will be possibly affected as well.

If the present research should demonstrate that certain tendencies in terms of cynicism-idealism still persist, by different class levels, at the termination of the pre-clinical years of medical school, the finding could be construed in part as empirical confirmation of Becker's proposition that "the growth of both cynicism and idealism are not simple developments, but are instead complex transformations; and the very notions 'idealism' and 'cynicism' must be seen as situational in their expressions rather than as stable traits possessed by individuals in greater or lesser degree".[14]

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[14]Howard S. Becker and Blanche Geer, "The Fate of Idealism In Medical School," American Sociological Review, XXII (February, 1958), 50-56.

Of further significance, the proposal of this research has been submitted for critical evaluation to:

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Survey of Research and Literature.--The formal efforts toward a sociology of medicine are a relatively recent development. Curtin notes that two rather recent volumes provide a picture of what the pioneers in this field consider it to be.[15] The Jaco volume[16] has seven sections which, although arbitrarily divided, provide some insight into the status of medical sociology. The sections are:

a) Social and Personal Components of Illness. Social epidemiology, the study of the relationship of social and cultural factors in infant mortality, chronic illness, stress and cardiovascular reactions (10 articles.)[17]

b) Health and the Community. This section includes a discussion of some of the major aspects of public health programs, such as social class differentials in resistance to such programs and the use of medical services in general. The problems of organizing the community for health are analyzed. (9 articles.)

c) Socio-cultural Aspects of Medical Care and Treatment. The conflicts of cultural beliefs in folk and modern society regarding therapy and illness; the role of patient and therapist in society. (5 articles.)

d) The Patient: A Person with an Illness. As the subheading implies, the emphasis here is upon the emotional and attitudinal aspects of the person rather than upon his disease. Explanations of the reasons why patients turn to the "healing" religions and detour to quacks are attempted. (5 articles.)

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[15] Jack H. Curtis, "Sociology and Medicine: Some Steps Toward Rapproachment", American Catholic Sociological Review, XXI (Spring 1960), 11. The volumes are: (1) Jaco, op. cit.; (2) Marvin K. Opler, Culture and Mental Health, (New York: The Macmillan Co., 1959).

[16] Jaco, op. cit.

[17] Curtis, op. cit.

e) Becoming a Physician: Medical Education. Here behavioral scientists analyze the medical school experience as social process and the medical student's development as socialization. The stages of a medical career, idealism (and its fate) and religious aspects of medical socialization are explored. (5 articles.)

f) Healing Practices and Practitioners. The various roles of physicians are examined under such aspects as specialization versus general practice, "good" and "poor" doctor, and specialized roles such as surgeon, pediatrician and anesthetist. The roles of the osteopath and the chiropractor and the problems of emotional adjustment to these roles are explored, as are the roles of the "functionally" ill and the alcoholic patient in relation to physician. (11 acticles.)[18]

g) The Medical Setting: Hospital, Clinic, and Office. The social organization of the hospital and the roles of the physician, nurse, and patient are studied under various aspects. How the social structure of various hospitals might affect their functioning, how the social organization of doctors might affect the use of new drugs and cultural backgrounds of nursing care are among the special topics considered. (9 articles.)[19]

The symposium Culture and Mental Health,[20] edited by Opler, consists of twenty-one topics ranging from dream analysis to the major patterns of the mental hospital. Curtis suggests that this volume "while containing some sociological analysis represents to

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[18]Curtis, "Sociology and Medicine: Some Steps Toward Rapproachment," pp. 11-12.

[19]Ibid.

[20]Opler, op. cit.

a greater extent the fruition of the anthropological rapprochment with psychoanalytic psychiatry."[21]

Four additional volumes which especially bear upon the area of this research proposal include Hammond and Kern's Teaching Comprehensive Medical Education,[22] The Student-Physician,[23] Boys in White,[24] and Social Science in Medicine.[25]

Teaching Comprehensive Medical Care: A Psychological Study of a Change In Medical Education[26] is a study which discusses the educational issues involved and describes in detail the clinic in which comprehensive care was taught--the educational philosophy, the curriculum, the staff, the patients--and compares it with the control clinic. The remainder of the book describes the findings which emerged from the research. It also describes theoretical and methodological work undertaken in the effort to evaluate the

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[21]Jack H. Curtis, Social Psychology (New York: McGraw-Hill Book Co., 1960), p. 124.

[22]Kenneth R. Hammond and Fred Kern, Jr., Teaching Comprehensive Medical Care: A Psychological Study of a Change in Medical Education (Cambridge: Harvard University Press, 1959).

[23]Robert K. Merton, George G. Reder, and Patricia L. Kendall, op. cit.

[24]Howard S. Becker, et al., op. cit.

[25]Simmons and Wolff, op. cit.

[26]Hammond and Kern, op. cit.

relative effectiveness of the teaching programs, as well as a study of the students who participated in them.[27]

The Student-Physician is a collection of papers which constitute a first set of reports on studies in the sociology of medical education begun some years ago by the Bureau of Applied Social Research of Columbia University in collaboration with the students and faculties of the schools of medicine of Cornell University, the University of Pennsylvania, and Western Reserve University. The reports in this volume are divided into four sections: a) theoretical and historical context of studies; b) career decisions; c) processes of attitudinal learning; d) two studies of the Cornell Comprehensive Care and Teaching Program.[28]

Boys in White is a participant observational study seeking "to analyze the data so gathered by attempting to build and progressively refine models of the school as a social organization and of the process of development of the student moving through that organization".[29] One of the essential conclusions of this study is that the actions of medical students (determined by the student culture) are collective rather than individual.[30] Pertinent to the above finding is the suggestion that reforms in

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[27] Ibid., p. xvi.

[28] Merton et al., pp. viii-ix.

[29] Becker et al., p. 25.

[30] Ibid., p. 437.

medical education will be most effective when they take into account the collective character of student behavior and recognize the fact that students have a degree of autonomy with respect to these issues.[31]

Social Science in Medicine analyzes the etiology of physical illness and a patient's chance of recovery in terms of such personal and social factors as family problems, job difficulties, economic insecurity, religion, hospital atmosphere, and personnel. The authors also report how newer developments in the social sciences can supplement medical techniques in the treatment of disease.[32]

More directly related to the specific problem of the present study is past research in terms of the relationship between academic achievement and social class. This relationship has been well documented at the high school level by studies such as those done by Hollingshead,[33] by Warner,[34] and by Rosen.[35]

Feldman's study reveals that "although there is general agreement that social class is a significant factor in academic statement, there is less agreement as to just what is being

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[31]Ibid., p. 439.

[32]Simmons and Wolff, op. cit.

[33]A. B. Hollingshead, Elmtown's Youth (New York: John Wiley and Sons, 1949).

[34]W. L. Warner and Associates, Democracy in Jonesville (New York: Harper and Brothers, 1949).

[35]B. C. Rosen, "The Achievement Syndrome: A Psycho-cultural Dimension of Social Stratification," American Sociological Review, XXI (1956), 203-09.

indexed by social class that accounts for these class differences in achievement".[36]

Support for Feldman's statement is provided by evidence from Terman and Oden,[37] Bell,[38] and Ericson[37] who demonstrate academic differences and their relation to class from a genetic orientation, from an economic perspective, and an emphasis upon class-linked differences in values and motives.[40]

Research done by Sibley,[41] Havighurst and Neugarten,[42] at the undergraduate college level provides both negative and positive support for the relationship between social class and academic achievement. Research at the professional level of law school

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[36]David Feldman, "Social Class and Academic Achievement at Law School," (unpublished Ph.D. dissertation, Department of Sociology, Stanford University, 1960), p. 6.

[37]L. M. Terman and M. H. Oden, The Gifted Child Grows Up (California: Stanford University Press, 1947).

[38]H. M. Bell, Youth Tell Their Story (Washington, D.C.: American Council on Education, 1938).

[39]M. Ericson, "Child Rearing and Social Status," American Journal of Sociology, 52 (1946), 190-92. See also: E. E. Maccoby and P. K. Gibbs, "Methods of Child Rearing", in W. E. Martin and C. B. Stendler (eds.), Readings in Child Development (New York: Harcourt-Brace, 1954).

[40]Feldman, op. cit.

[41]E. Sibley, "Some Demographic Clues to Stratification," American Sociological Review, VII, (1942), pp. 322-30

[42]R. J. Havighurst and B. L. Neugarten, Society and Education (Boston: Allyn and Bacon, 1957), p. 227.

indicates that academic achievement is in part a function of social class.[43] No study at the medical school level has thus far been found to demonstrate the inter-relationships of social class, attitudes, and academic achievement. Hence, it is the central tentative proposition of the present study that social class differences in medical school will be related to academic achievement, stress and anxiety responses, the internalization of professional attitudes such as the respect for the dignity, self-esteem and value of man; cynicism-idealism, subjective opinion of ability, and membership in social (fraternity) groups..

Caploritz' research at the medical school level in terms of student-faculty relations indicates that the acquisition of technical knowledge and skills is given more emphasis than the acquisition of medical values by the medical school.[44]

Edwin F. Rosinski's study[45] of medical school faculty attitudes reveals that "the atmosphere into which the medical student is initially introduced is dominated by attitudes more autocratic

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[43]Feldman, op. cit.

[44]David Caploritz, "Student-Faculty Relations in Medical School: A Study of Professional Socialization" (unpublished Ph.D. dissertation, Department of Sociology, Columbia University, 1961). From: University Microfilms, Inc., Dissertation Abstracts: Abstracts and Mimeographa, XXI (1961), 666.

[45]Edwin F. Rosinski, "A Study of Medical School Faculty Attitudes," Journal of Medical Education, XXXVII, (February, 1962).

than those of the clinical years which represent, for him, an educational setting of greater relevance."[46]

Related to the finding that clinicians exhibit attitudes more democratic than those of basic scientists, Rosinski asserts that

> those (faculty members) with an M. D. degree are also more democratic in their attitude toward teaching than those with a Ph.D. This may appear obvious, since clinicians and M. D.'s are also basic scientists. It might suggest that a basic science department composed exclusively of Ph.D.'s would exhibit even more authoritarian attitudes than one in which both degrees were represented. The educational implications are evident.[47]

Research on career decisions of medical students suggests that students with initial choices of specialty practice remain constant in their decisions throughout medical school. The reverse is true among those who initially choose general practice; the majority have switched to specialty practice by the end of the senior year.[48]

Other research, however, indicates an opposing viewpoint of career decisions of medical students. Lyden's evidence reveals the effect of certain minds of social relationships entered into in medical school on the career choices graduates made in regard

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[46] Ibid., p. 122.

[47] Ibid., pp. 122-123.

[48] Denise B. Kandel, "The Career Decisions of Medical Students: A Study of Occupational Recruitment and Occupational Choice," (unpublished Ph.D. dissertation, Department of Sociology, Columbia University, 1960). From: University Microfilms Inc., Dissertation Abstracts: Abstracts and Mimeographs, XXI (1961), 695.

to their training. He reports:

> When specific interrelated friendships were analyzed in terms of friendship groups, it was found that similarity of specialty interests was not an important basis for group membership. It was also found that in the absence of specialty norms ther did not appear to be any clearly consistent relationship between the performance of the Group Friendship Leaders and their followers on the Proficiency Indicators.[49]

Further research at the medical school level in terms of the student's clinical performance indicates that measures can be developed for evaluating the clinical training of medical school students which represent an improvement over presently existing and generally accepted criteria.[50] Kubany asserts that the criteria, as used in his study, are means for quantitatively describing the student's performance in a non-academic clinical setting, e. g., either in bedside hospital training or in the outpatient clinical training. Two approaches to the criterion problem were explored: one concerned instructor-assessment of students using critical incident data as well as data developed in the study, the other concerned student-assessment of students using a sociometric, peer nominations technique.[51]

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[49]Fremont James Lyden, "Social Relationships in Medical School and Career Decisions Affecting Medical Proficiency", (unpublished paper delivered at the section on Medical Sociology of the Annual Meeting of the American Sociologocal Association, Washington, D.C., August 29, 1962).

[50]Albert J. Kubany, "Evaluation of Medical Student Clinical Performance: A Criterion Study", (unpublished Ph.D. dissertation, Department of Sociology, University of Pittsburgh, 1957).

[51]Ibid., p. 12.

In somewhat a related field for the medical student, there is previous research in terms of the sociology of medical education. Merton and associates have investigated comparative data for 1700 students, at various stages of their training at Cornell, Pennsylvania, and Western Reserve. The students' values and attitudes were related to various evaluations of their performance by the faculties of these schools.[52]

Studies in the revision of medical education suggests three possible approaches: a) an experimental approach in medical education, b) a democratic method of working with the faculty, and c) an organization of a whole program of a school and its affiliated departments as related to education , research, and service. Dr. Thomas Hale Ham, professor of medicine and chairman of the Committee on Medical Education at the School of Medicine, Western Reserve University, asserts:

> A preliminary trial (at Western Reserve University) has been made for a period of six years of combining a research method with a democratic organization for development and application of a program of medical education. This combination of methods can establish a gratifying and effective university environment and can be organized in a complex medical center.[53]

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[52]Robert K. Merton, Samuel Bloom and Natalie Rogoff, "Studies in the Sociology of Medical Education," Journal of Medical Education, XXXI, (August, 1956), 552-64.

[53]Thomas Hale Ham, "Methods in Development and Revision of a Program of Medical Education," Journal of Medical Education, XXXI, (August, 1956), 519-21.

Related to Ham's suggestion of an integrated program of medical education is Patterson's conclusion that "the organization of the material should be consistent with the desired thought pattern, that the biological sciences and patient study should supplement each other and that the student should obtain an integrated framework of knowledge which could be extended with experience."[54]

While no single study has been directly concerned with the proposed subject matter of this present effort, a few additional related ones have proved helpful and illuminating as background material.[55]

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[54]John Patterson, "Interdepartmental and Departmental Teaching of Medicine and Biologic Science in Four Years," Journal of Medical Education, XXXI, (August, 1956), 523.

[55]F. T. Adams, "Role Accommodation: A Study of Nurses and Attendants in a Mental Hospital" (unpublished Ph.D. dissertation, Department of Sociology, Tulane University, 1957).

James Gregory Allen, "Factors Related to Leadership in a College Residence Hall" (unpublished Ph.D. dissertation, Department of Sociology, University of Iowa, 1960).

R. W. Avery, "Orientations Toward Careers in Business: A Study in Occupational Sociology" (unpublished Ph.D. dissertation, Department of Sociology, Harvard University, 1950).

Ira E. Berg, "Role Personality and Social Structure: A Study of Nursing in the General Hospital" (unpublished Ph.D. dissertation, Department of Sociology, Harvard University, 1959).

Audrey Borenstein, "The Ethical Ideal of the Professions: A Sociological Analysis of the Academic and Medical Profession" (unpublished Ph.D. dissertation, Department of Sociology, Louisiana State University, 1957).

R. G. Brown, "Problems of Social Organization of a New Psychiatric Inpatient Service" (unpublished Ph.D. dissertation, Department of Sociology, University of North Carolina, 1960).

Theoretical Considerations.--Elison asserts that "both medicine and sociology are fields of research which are characterized by a low degree of articulation." He notes that unlike physics, both medicine and sociology require numerous concepts and theories

55--Continued

N. Burack, "Relationship of the Social Status of Students to their Retention and Progress at the Junior College Level" (unpublished Ph.D. dissertation, Department of Sociology, University of Chicago, 1951).

Jerome E. Carlin, "The Lawyer as Individual Practitioner" (unpublished Ph.D. dissertation, Department of Sociology, Columbia University, 1961).

R. G. Corwin, "Role Conception and Mobility Aspiration: A Study in the Formation and Transformation of Bureaucratic, Professional, and Humanitarian Nursing Identities" (unpublished Ph.D. dissertation, Department of Sociology, University of Minnesota, 1960).

H. R. Doby, "Authority, Goals, and Prestige in a General Hospital" (unpublished Ph.D. dissertation, Department of Sociology University of Chicago, 1959).

Mary E. Gross, "Physicians in Bureaucracy: A Case Study of Professional Pressures on Organizational Roles" (unpublished Ph.D. dissertation, Department of Sociology, Columbia University, 1960).

Ruth Hoffman, "The Doctor's Role: A Study of Consensus, Congruence, and Change" (unpublished Ph.D. dissertation, Department of Sociology, University of Nebraska, 1957).

J. E. Hughes, "The Social Evaluation of Occupations: A Study of Occupational Prestige" (unpublished Ph.D. dissertation, Department of Sociology, University of Pennsylvania, 1960).

Dan C. Lortie, "The Striving Young Lawyer: A Study of Early Career Differences in the Chicago Bar" (unpublished Ph.D. dissertation, Department of Sociology, University of Chicago, 1950).

Hans Otto Mauksch, "The Nurse: A Study of Role Perception" (unpublished Ph.D. dissertation, Department of Sociology, University of Chicago, 1959).

D. McElrath, "Prepaid Group Medical Practice" (unpublished Ph.D. dissertation, Department of Sociology, Yale University, 1957).

Frank Miller, "Social Structures and Medical Change in a Mexican Indian Community" (unpublished Ph.D. dissertation, Department of Sociology, Harvard University, 1959).

to explain limited sets of phenomena.[56]

From an historical perspective of both medicine and sociology the grand theorists" sought to explain everything with one idea they believed to be fundamental. In the eighteenth century, Rush submitted a theory of convulsive action now considered as a medical fad. In the twentieth century Watson presented his theory of behaviorism. In sociology the current efforts of Parsons with his theory of action exemplify more than others a struggle to

55--Continued Paul William Mundy, "The Negro Boy Worker in Washington, D.C." (unpublished Ph.D. dissertation, Department of Sociology, Catholic University of America, 1951).

Alfred Harold Nelson, "Reference Group Theory, Selection, and the Images of Professions" (unpublished Ph.D. dissertation, University of Southern California, 1960.

Enrico L. Quarentelli, "The Dental Student: A Social Psychological Study" (unpublished Ph. D. dissertation, University of Chicago, 1958).

Mary-Elizabeth Reichert Smith, "Patterns of Interpersonal Preferences in a Nursing School Class: A Sociometric Study of Changes in Valuational Bases of Informal Structure in a School Group" (unpublished Ph.D. dissertation, Department of Sociology, Catholic University of America, 1952).

Ruth E. Searles, "The Relation Between Communication and Social Integration in the Community Hospital" (unpublished Ph.D. dissertation, Department of Sociology, University of Michigan, 1961).

Richard Thomas Smity, "A Study of the Professional Role of Dentists" (unpublished Ph.D. dissertation, Department of Sociology, University of Wisconsin, 1959).

M. Winterbottom, "The Relationship of Childhood Training in Independence to Achievement Motivation" (unpublished Ph.D. dissertation, Department of Sociology, University of Michigan, 1953).

David Logan Wolfe, "Conflicts in Academic Commitments to Organizational Change: A Study in the Sociology of Education" (unpublished Ph.D. dissertation, Department of Sociology, University of Oregon, 1961).

56 Howard E. Freeman, Sol Levine and Leo G. Reeder, Handbook of Medical Sociology (New Jersey: Prentice-Hall, 1963), p. 452.

"unify . . . . . scattered propositions." A helpful approach in the development of limited theories could be found in Merton's volume Social Theory and Social Structure.[57]

Within general sociology, medical sociology has been stimulated by the substantive and methodological contributions of related field. Like Aristotle and other social philosophers, Auguste Comte found that society and social institutions originate in human nature. He realized that the human mind can develop only through society; the individual must be considered always in his social setting. Additionally, Comte was one of the first to discuss the existence of social change.[58]

Durkheim's well-known theory of "collective representations" stressed the significance of group experiences found in every individual. They evidence and symbolize the common social life.[59]

Studies in social stratification, social class, and social mobility have provided insight into the social consequences of medicine in relationtto the distributive functions of the economy.[60]

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[57]Ibid., p. 453.

[58]S. Stansfeld and Robert C. Williamson, Social Psychology (New York: The Ronald Press Company, 1958), p. 9.

[59]Stansfeld and Williamson, op. cit.

[60]Seymour Martin Lipset and Reinhard Bendix, Social Mobility in Industrial Society (California: University of California Press, 1959); W. Lloyd Warner and James C. Abegglen, Occupational Mobility (Minnesota: University of Minnesota Press, 1955); Leonard Reissman, Class in American Society (Illinois: The Free Press of Glencoe, 1959); C. Wright Mills, The Power Elite (New York: Oxford University Press, 1956).

Educational sociologists have studied the place of education in the community and in society generally. In his Community Backgrounds of Education, Cook placed some emphasis on the function of educational institutions in the community and analyzed the social relationship between the school and other aspects of the community.[61] Closely related to the above has been an attempt to analyze the patterns of social interaction and social roles within the school society and the relation of personality within the school to outside groups. The works of Waller, Greenhoe, Znaniecki, Wilson, Caplow, and McGee are significant in this general area. Studies of clique structure, leadership, and rejection also have contributed much to an understanding of group processes within the school.[62]

From the study of large-scale organization there has developed a theory of bureaucracy which is very useful in analyzing the internal organization and operation of medical schools, hospitals, and other structures.[63] The sociology of occupations has furnished the medical profession with profiles of important

[61] Wilbur B. Brookover and David Gottlieb, A Sociology of Education (New York: American Book Company, 1964), pp. 8-9.

[62] Ibid.

[63] Max Weber, From Max Weber: Essays in Sociology, trans. by H. H. Gerth and C. W. Mills (New York: Oxford University Press, 1946); The Theory of Social and Economic Organization, trans. by A. M. Henderson and Talcott Parsons (New York: Oxford University Press, 1947); Joseph Bensman and Bernard Rosenberg, Mass, Class, and Bureaucracy (New Jersey: Prentice-Hall, 1963).

occupations on the local, national, and international levels.[64] Studies in socialization and professionalization have provided insight into the matrix of social relationships in which "the medical student internalizes and makes his own the attitudes and values which will largely determine his future professional role."[65]

Of those works already referred in the survey of the literature these most closely relate to medical careers, namely, Caploritz, Kandel, Kubany, Merton, Borenstein, Doby, Gross, and Hoffman.

The Medical School Setting.--Probably nothing that the student has previously attempted has prepared him for the stresses which medical studies contain as a matter of course. The magnitude of the field, the intensity of the studies, the range of material which is given the student--all increase the pressures placed on any student in professional work.

In this exploratory and descriptive case study of a midwestern medical school, the caliber of the student body is itself impressive. Most of them performed at a superior level in their

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[64]Everett C. Hughes, Men and Their Work (Illinois: Free Press, 1958); Sigmund Nosow and William H. Form (eds.), Man, Work, and Society (New York: Basic Books, 1962).

[65]Bloom, op. cit.; Frederick Elkin, The Child and Society: The Process of Socialization (New York: Random House Press, 1960); Jean Piaget, The Language and Thought of the Child (London: Routledge and Kegan Paul Ltd., 1932).

undergraduate years (a "B" average or better).[66] In addition, the standard grading curve of the medical school usually places no more than 15 per cent of a graduating class in "the upper ten category." On the other hand, some 25 per cent of a freshman medical group usually receive a first-year grade, equivalent to a "C".[67]

This problem of grades is given further import by the need to obtain high grades to offset future problems. The student has an early awareness that "good" grades at the pre-clinical level are necessary to act as a "buffer" to compensate for a "poor" grade in one or more subjects in order to maintain a "75" overall average at the termination of each pre-clinical year.

The pre-clinical years of medical school require a great deal of intellectual and physical effort on the part of the typical medical student. Classes are held six days a week with an average of two or three lectures a day accompanied by laboratory sessions.[68] In each class the medical student attends, he is required to read an assigned number of pages either in the text or in the laboratory manual or in both.

As would be expected, a student must keep pace with his

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[66]See Appendix, Tables I-1 through I-2 showing the distributions for the latter.

[67]See Appendix, Table I-3 showing the distributions for the latter.

[68]See Appendix, Table J-1.

instructors; he cannot afford to let his studies slide until a few days before a quiz or examination. The amount and complexity of the material preclude his being able to "cram" successfully for a test. The medical student in the pre-clinical years is made continuously aware of this by upper classmen's comments and by those of his fraternity brothers with whom he lives or with whom he occasionally comes into contact at fraternity meetings and social gatherings.[69]

Additionally, because he must successfully complete a comprehensive examination of the medical school, the National Board examination or the State Board Examination, the medical student must take detailed classroom notes. These, which require the students to be alert throughout class, serve as a basic review tool for the later tests.

Medical students commonly engage in school work 10 to 12 hours a day, 5 to 7 days a week, to stay abreast of the class. Prior to the examinations, when the necessity of the reviews is also present, these averages go up considerably. A student may literally study in his every available waking hour. At times when he becomes tired of studying, it is not unusual for him to inform his roommates and fraternity brothers that "medicine is

[69]These findings are based upon the writer's participant observations of medical students in the pre-clinical years of medicine. The writer has lived with pre-clinical and clinical students in one of the national medical fraternity houses. He has been accepted and initiated as a "fraternity brother." He has lived with 52 (47 per cent) of the first-year pre-clinical students who constitute the sample of this study.

for the birds," that there is "another way of making a buck," or "I would rather dig ditches than repeat this year."

The first year of the pre-clinical level at medical school is a "training for uncertainty."[70] The medical student at this stage of professionalization does not know precisely what he is supposed to learn, how much he is supposed to learn, and how he should go about his studies. For those medical students who live in either of the two medical fraternity houses there will be sporadic "guidance and counselling" in an informal setting by upper-classmen. "Old tests" will also act as a guide to medical students who live in a fraternity setting.

The apparent immensity of material often awes students. There is, particularly at the beginning, a great deal of doubt generated about intellectual capacity, motivation and the like. Intensifying these self-doubts is the high degree of specialization of medicine in a society marked by rapid social change.

Empirical Questions.--In this research an attempt is made to examine some selected empirical questions relevant to medical students in terms of social class, attitudes, and academic achievement. The empirical questions at issue in this research are:

1) Are medical students from families of upper class background more often found at higher levels of academic achievement in the first year of medical school?

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[70] R. C. Fox, "Training for Uncertainty," in R. K. Merton, G. Reader, and Patricia L. Kendall (eds.), The Student Physician, pp. 207-41.

1) (Cont.)

a) Social class
b) Grades

2) Is the level of stress and anxiety related to academic achievement (in the first year) at medical school, and if so, is this level of stress and anxiety associated with social class?

a) Level of stress and anxiety
b) Grades
c) Social class

3) Do middle and lower class medical students more frequently experience anxiety in the first and second years of medical school?

a) Social class
b) Anxiety

4) Does the internalization of professional attitudes of medical students from the upper classes tend to be easier than for medical students from the lower classes?

a) Internalization of professional attitudes
b) Social class

5) Do medical students from families of upper class background tend to express a low degree of cynicism and a relatively high degree of idealism in the pre-clinical years of medical school?

a) Social class
b) Cynicism-Idealism

6) Do medical students from the lower classes experience more difficulty and/or less desire to become members of a fraternity?

a) Social class
b) Membership in fraternity

Hypotheses of the Present Study.--The theoretical considerations and the empirical questions presented in this chapter give rise

to four hypotheses. They are as follows:

1) Medical students from families of upper class background will more often be found at higher levels of academic achievement; medical students from families of middle and lower class background will more often be found at lower levels of academic achievement.

2) Medical students from families of upper class background will tend to express a relatively lower degree of stress and anxiety. Medical students from families of middle and lower class background will tend to express a relatively high degree of stress and anxiety.

3) Because of previous socialization, the internalization of professional attitudes of medical students from the upper classes will tend to be easier than for medical students from the middle and lower classes.

4) Medical students from families of upper class background will tend to express a low degree of <u>cynicism</u> and a relatively high degree of idealism in the pre-clinical years of medical school. Medical students from families of middle and lower class background will tend to express a relatively high degree of <u>cynicism</u> and a relatively low degree of <u>idealism</u> in the pre-clinical years of medical school.

Additionally an attempt is made to investigate whether or not there are changing values and attitudes of the medical students as they move through successive phases of a status-sequence during their pre-clinical years of medicine.

CHAPTER II

PROCEDURES AND METHODS OF THE RESEARCH

This chapter reports the manner in which the data of the present study were obtained. In addition, it describes the characteristics of the sample studied, the interviews, the nature of the basic variables, and the procedures utilized in the statistical analysis of the data.

Source of Data.--The research data in the present study were gathered mainly through the use of the structured interview technique. The structured interview schedule[1] provided, among other things, information on the education, occupation, and income of the students' fathers, the subjective opinion of their ability, motives for entering medicine, and membership in fraternity. A two-page questionnaire containing five questions was administered to each medical student.

Taylor's Personality Scale of Manifest Anxiety[3] was utilized to measure the medical students' "ability to cope with stress and anxiety."

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[1]See Appendix A. (Parts of the structured interview schedule were patterned after Helen Hofer Gee.

[2]See Appendix B. "The Student View of the Medical Admissions Process," The Journal of Medical Education, 32, (October, 1957), 140-152.

[3]Janet A. Taylor, "A Personality Scale of Manifest Anxiety," Journal of Abnormal Social Psychology, 48, (1953), 285-290. (See Appendix D).

Attitude changes were analyzed by Rosinski's Medical Student Attitude Inventory[4] in relation to seven specific objectives in medical education such as the respect for the dignity, self-esteem and value of man.

The Cynicism-Idealism Inventory,[5] consisting of twenty-four questions, was utilized to identify degrees of cynicism or idealism (or ambivalence) in the sample.

Additional information--the undergraduate institution the students attended, their undergraduate and medical school scholastic test scores--was obtained from administration records.

The first and second years grade averages in medical school served as the operational measure of the dependent variable, academic achievement. Data on father's occupation and education were used as the basis for indexing class position, the independent variable of the study.

The Medical College Admissions Test scores were also received from administration records.

The participant observation technique was additionally used, since the researcher is living with forty-seven medical students who comprised fifty-two percent of the sample. A group of 82 of 90 medical students who constituted the 1962-1963 freshman class,

[4]Edwin F. Rosinski, "Professional, Ethical and Intellectual Attitudes of Medical Students," Journal of Medical Education, 38, (1963), 1016-1022. (See Appendix E).

[5]See Appendix C.

and the 1963-1964 sophomore class of a midwestern school of medicine made up the sample of study.[6]

The Biographical Inventory, the Idealism-Cynicism Inventory, and the Medical Student Attitude Inventory were repeated at three regular six-month intervals.

The Interviews and the Administration of Test Instruments.--The interviews and the administration of the three inventories (the Biographical Inventory, the Idealism-Cynicism Inventory, and the Medical Student Attitude Inventory) were commenced on November 21, 1962, and these were completed by January 28 1963. The three inventories were again administered in August 1963, and in January 1964.

It was feared that a foreign student, Caucasian by race, British by nationality, Indian by ethnicity, with former residence in South America (British Guiana) might encounter some extreme difficulties in interviewing eighty-two American freshman medical students; that they might prove unwilling to submit to interviewing or be reluctant to answer the various questions should they be agreeable to the interview. Fortunately, such fears were almost wholly unrealized, and the freshman medical

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[6]The freshman class of 1962-1963 was initially comprised of 90 medical students. Six medical students (five males and one female) withdrew during the first quarter session. One student refused to be interviewed "for religious reasons." One male Student failed the freshman year.

students proved to be extremely cooperative and uninhibited.[7]

What are the reasons for this? Several possibilities seem likely: the writer has had considerable contact with medical students of all ages and backgrounds for the past several years; he lived with medical students in both national medical fraternities during his entire undergraduate and graduate training. The fact that the writer was accepted and initiated as a "fraternity brother" in the Phi Sigma Chapter of Phi Chi national medical fraternity was of inestimable value. The fact that he had received an intensive training in the biological sciences, and could speak familiarly in pre-clinical terminologies also proved to be an essential asset. In addition, American medical students are vitally concerned with their situation as future physicians and are psychologically prepared to discuss it if convinced that they can do so safely.

A factor of undoubted importance was the initial careful explanation to each medical student that the interview would be strictly confidential. In every case the medical student was assured that he would not be identified by name nor would any person or place he mentioned be listed by name in the final result. Every attempt was made to establish rapport before the interview proper began. It is significant that only one medical student

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[7]The format for the description of this section of the research was patterned after Paul Mundy's doctoral dissertation, "The Negro Boy Worker in Washington, D.C.," op. cit., pp. 21-26.

refused to be interviewed, and this was due to his religious commitments.

An appointment was made for each medical student either in person or by telephone. Each interview was completed in one visit; three of the interviews required more than one attempt at appointments. In each case, the medical student called and requested a later appointment.

The interviews of all male medical students and the administration of the three inventories (the Biographical Inventory, the Idealism-Cynicism Inventory, and the Medical Student Attitude Inventory) were held in two separate and private rooms at one of the national medical fraternity houses, namely, Phi Sigma of Phi Chi and Phi Beta Phi. Male medical students who lived at home or in private apartments were requested to be present at one of the fraternity houses at an appointed time. The interviews and the administration of the three inventories of the four female medical students in the sample were conducted in their place of residence in the Chicago area.

Each appointment lasted approximately two and one-half hours. In one room the medical student was given first the Biographical Inventory, followed by the Idealism-Cynicism Inventory, and then the two-page questionnaire.[8] He was then asked to enter an adjoining room for the interview. He was asked

[8]See Appendices C and D.

to sit on a comfortable living room chair. Each interview was conducted as leisurely as possible. At the completion of the interview, the Medical Student Attitude Inventory was administered. The writer thanked the medical student for his cooperation and wished him success in his chosen career.

The Biographical Inventory, the Idealism-Cynicism Inventory, and the Medical Student Attitude Inventory which were repeated at the two remaining six-month intervals lasted approximately forty-five minutes for each medical student.

Characteristics of the Sample Studied.--The freshman class of 1962-1963 initially comprised of 90 medical students. Six medical students (five males and one female) withdrew during the first quarter session. One male medical student failed the freshman year. One male medical student refused to be interviewed. The final sample studied consisted of 82 freshman medical students at a midwestern school of medicine during the academic years 1962-63 and 1963-64.

Of the 82 medical students, 78 (95.1 per cent) were males and 4 (4.9 per cent) were females. All the medical students in the sample were Americans, with the exception of one male foreign student from Hong Kong.[9] Eighty (97.5 per cent) of the students were Caucasians and 2 (2.5 per cent) were Mongolians. No Negro

[9]This student was included in the sample on the basis that he had completed his pre-medical studies in the United States and hence would not affect the results of this study in any substantial degree.

medical student was represented in the sample.

The majority of the medical freshmen were young, unmarried and predominantly Catholic. As of the time of their entry into medical school, their ages ranged from 20 to 24. Of the 82 single and married medical students (Table 1), 75 (89.0 per cent) were Catholic, 5 (6.1 per cent) Protestant, and 3 (3.7 per cent) Jewish, the remaining medical student (1.2 per cent) expressed no religious affiliation (Table 2).

Tabular results shown in Tables 4-8 indicate that the freshmen medical students in the sample tend to come from rather small, fairly well educated families living in urban communities at a reasonably high socioeconomic level. The nationality-descent (Table 3) of these students was predominantly either Irish (15.8 per cent) or Italian (18.3 per cent), drawn primarily from lower-middle and upper-lower classes.

Three-fourths of the medical freshmen have two or fewer siblings (Table 4), and 43 (52.5 per cent) are oldest children (Table 5). The majority of these students had siblings whose ages ranged from 15 to 19 (Tables 6 and 7).

The home town of 54 (65.8 per cent) medical freshmen is a large city (over 100,000 population) or its suburb, and for another 24 (29.3 per cent) it is a smaller city (10,000 to 100,000 population), as shown in Table 8. In terms of regional and home state distribution, the medical students were drawn

primarily from the Midwest (Table 9). Forty-seven (57.3 per cent) were residents of the state of Illinois. The South and Southwestern regions were not represented in the sample (Table 9).

TABLE 1

MARITAL STATUS OF MEDICAL FRESHMAN RESPONDENTS

Category	Number	Per Cent
Single	75	91.4
Married	7	8.5
Total	82	99.9

TABLE 2

RELIGIOUS AFFILIATION OF MEDICAL FRESHMEN IN SAMPLE

Religious Affiliation	Number	Per Cent
Catholic	73	89.0
Protestant	5	6.1
Jew	3	3.6
None	1	1.2
Total	82	99.9

TABLE 3

PARENTS' NATIONALITY-DESCENT OF MEDICAL FRESHMAN SAMPLE

Nationality-Descent	Fathers		Mothers		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
German-German	11	13.4	10	12.2	21	13.9
Irish-Irish	13	15.9	13	15.8	26	16.9
Polish-Polish	7	8.5	10	12.2	17	10.4
Chinese-Chinese	1	1.2	1	1.2	2	1.3
Japanese-Japanese	1	1.2	1	1.2	2	1.3
African-African	-	-	-	-	-	-
Italian-Italian	15	18.3	11	13.6	26	16.9
German-Irish	3	3.6	3	3.6	6	3.5
German-Others	8	9.8	8	9.8	16	9.8
Irish-Others	2	2.4	4	4.8	6	3.5
Polish-Others	1	1.2	1	1.2	2	1.3
Italian-Others	1	1.2	1	1.2	2	1.3
Both-Others	19	23.2	19	23.2	28	19.9
Total	82	99.9	82	100.0	164	100.0

TABLE 4

NUMBER OF SIBLINGS OF MEDICAL FRESHMEN RESPONDENTS

Siblings	Number	Per Cent
None	7	8.5
One	28	34.2
Two	23	28.0
Three	13	15.8
Four or more	11	13.4
Total	82	99.9

TABLE 5

POSITION AMONG SIBLINGS OF MEDICAL FRESHMEN RESPONDENTS

Position	Number	Per Cent
Oldest	43	52.5
Youngest	17	20.7
Neither Youngest or Oldest	16	19.5
Only Child	6	7.3
Total	82	100.0

TABLE 6

AGE AND EDUCATIONAL ATTAINMENT OF BROTHERS AND SISTERS OF MEDICAL FRESHMAN RESPONDENTS

BROTHERS

Age Group	Stage in School																		Still in School				TOTAL	
	At Home		Nursery School		Kinder-garten		1-7 Elemen. Grades		8th Grade		1-3 Years of High School		Completed High School		1-3 Years of College		Completed Undergrad. College		1-3 Years of Grad. or Profess.		3 or more years of Grad. or Profess.		YES		NO			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
0 - 4	4	4.3																									4	4.3
5 - 9							4	4.3															4	4.3			4	4.3
10-14							6	6.4			3	3.2											9	9.6			9	9.6
15-19											11	11.8	4	4.3	7	7.5							19	20.4	3	3.2	22	23.7
20-24													8	8.6	11	11.8	2	2.2	4	4.3			13	14.0	12	12.9	25	26.9
25-29													3	3.2	3	3.2	3	3.2	5	5.4	6	6.4	10	10.8	10	10.8	20	21.5
30-34													1	1.0			1	1.1	2	2.2					4	4.3	4	4.3
35-39													2	2.2			1	1.1	1	1.1	1	1.1			5	5.4	5	5.4
40 and over																												
Total	4	4.3					10	10.7			14	15.0	18	19.3	21	22.5	7	7.6	12	13.0	7	7.5	55	58.9	34	35.6	93	100.0

TABLE 7

AGE AND EDUCATIONAL ATTAINMENT OF BROTHERS AND SISTERS OF MEDICAL FRESHMAN RESPONDENTS

SISTERS

Age Group	Stage In School																				Still in School					
	At Home		Nursery School		Kinder-garten		1-7 Elemen. Grades		8th Grade		1-3 Years of High School		Completed High School		1-3 Years of College		Completed Undergrad. College		1-3 Years of Grad. or Profess.		3 or more years of Grad. or Profess.		YES		NO		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0 - 4	2	2.2																									2	2.2
5 - 9							6	6.7															6	6.7			6	6.7
10-14							12	13.5			3	3.4											15	16.8			15	16.9
15-19											15	16.8	7	7.8	9	10.1							30	33.7	1	1.1	31	34.8
20-24													7	7.8	7	7.8	5	5.6					5	5.6	14	15.7	19	21.3
25-29													6	6.7			1	1.1	1	1.1			1	1.1	7	7.8	8	9.0
30-34													2	2.2	1	1.1	1	1.1							4	4.4	4	4.5
35-39													3	3.4			1	1.1							4	4.4	4	4.5
40 and over																												
Total	2	2.2					18	20.2			18	20.2	25	27.9	17	19.0	8	8.9	1	1.1			57	63.9	30	33.4	89	99.9

TABLE 8

PLACE OF RESIDENCE OF MEDICAL RESPONDENTS BY SIZE

Size of Home Towns	Number	Per Cent
a. A large city (over 100,000 pop.)	45	54.8
b. The suburb of a large city	9	11.00
c. A small city (10,000 to 100,000 pop.)	24	29.3
d. A small town (2,500 to 10,000 pop.)	1	1.2
e. A small town (under 2,500 pop.)	3	3.6
f. The country, but family received income from work in town	-	-
g. The country, but family owned the ranch or farm it operated	-	-
h. The country, rented or tenant farm or ranch	-	-
Total	82	99.9

TABLE 9

REGIONAL AND HOME STATE DISTRIBUTION OF MEDICAL FRESHMEN RESPONDENTS

Home State	Midwest		East		Far West		Northwest		Noncontinental		Foreign		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Illinois	47	57.4											47	57.4
Michigan	6	7.3											6	7.3
Ohio	6	7.3											6	7.3
Wisconsin	2	2.4											2	2.4
Kansas	1	1.2											1	1.2
Minnesota	1	1.2											1	1.2
Pennsylvania			6	7.4									6	7.4
New Jersey			2	2.4									2	2.4
New York			2	2.4									2	2.4
Massachusetts			1	1.2									1	1.2
Connecticut			1	1.2									1	1.2
California					3	3.7							3	3.7
Montana							2	2.4					2	2.4
Hawaii									1	1.2			1	1.2
Foreign											1	1.2	1	1.2
Total	63	76.8	12	14.6	3	3.7	2	2.4	1	1.2	1	1.2	82	99.9

Parents' Occupation and Education.--The fathers' occupation of the medical freshmen were primarily semi-professional and technical (Table 10). Of the occupations represented by the fathers, 20 (24.3 per cent) were from the traditional professional class; that is, physicians, lawyers, and engineers, with physicians alone constituting 14.6 per cent of the total. Although medicine and related fields are the occupations of only 17 per cent of the fathers, this percentage is three-fourths of the total whose backgrounds are professional.

Twenty-two (26.8 per cent) of the fathers completed high school only (Table 11); 5 (6.1) per cent) obtained a bachelor's degree (Table 12); 6 (7.3 per cent) received one degree (Table 13). Of the fathers who attended college, 9 (30.0 per cent) majored in biological science (Table 14). For mothers who attended college 5 (38.4 per cent) majored in languages (Table 15).

In terms of type of education, 41 (50.0 per cent) of the fathers and 38 (46.4 per cent) of the mothers received no Catholic education (Table 16).

TABLE 10

DISTRIBUTION OF MEDICAL FRESHMEN RESPONDENT FATHERS AND MOTHERS BY OCCUPATIONAL CLASS

Occupational Class	Fathers		Mothers		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Professional						
Medical	12	14.6	-	-	12	7.3
Dental	-	-	-	-	-	-
Related to Medical	2	2.4	3	3.6	5	3.0
College Professor	-	-	-	-	-	-
Teacher below college level	-	-	3	3.6	3	1.8
Clergy	-	-	-	-	-	-
Lawyer	4	4.8	-	-	4	2.4
Engineer	2	2.4	-	-	2	1.2
Other Professional	-	-	-	-	-	-
Semi-Professional and Technical	13	15.8	1	1.2	14	8.5
Farm Owner and Farm Manager	-	-	-	-	-	-
Manager, Official Proprietor						
Proprietor	8	10.0	-	-	8	4.8
Manager	6	7.3	-	-	6	3.6
Official	-	-	-	-	-	-
Clerical	2	2.4	3	15.8	15	9.2
Sales	11	13.4	3	3.6	14	8.5
Craftsman	1	1.2	-	-	1	0.6
Foreman	6	7.3	-	-	6	3.6
Operative	11	13.4	2	2.4	13	7.9

TABLE 10 - Continued

Occupational Class	Fathers		Mothers		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Laborer	-	-	-	-	-	-
Service Worker	4	4.8	9	11.0	-	-
Farm laborer	-	-	-	-	-	-
Housewife or homemaker	-	-	48	58.5	48	29.2
Total	82	99.9	82	99.9	164	99.9

TABLE 11

PARENTS' EDUCATION OF
MEDICAL FRESHMAN

Educational Attainment	Fathers		Mothers		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
1-7 Elementary education	4	4.9	2	2.4	6	3.6
Completed grade school	7	8.5	11	13.4	18	11.0
1-3 High School	19	23.2	15	18.3	34	20.7
Completed high school	22	26.8	41	50.0	63	38.4
1-3 College	10	12.2	6	7.3	16	9.8
Completed undergraduate college	2	2.4	3	3.7	5	3.0
1-2 Graduate or Professional	2	2.4	2	2.4	4	2.4
3 or more years graduate or professional	16	19.5	2	2.4	18	11.0
Totals	82	99.9	82	99.9	164	99.9

TABLE 12

TYPE OF COLLEGE OR UNIVERSITY DEGREES
HELD BY MEDICAL FRESHMEN
RESPONDENT FATHERS AND MOTHERS

Highest College or University Degree	Fathers		Mothers		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Bachelors	5	6.1	6	7.3	11	6.7
Masters	-	-	-	-	-	-
Doctorates	15	18.3	1	1.2	16	9.7
No degrees	62	75.6	75	91.50	137	83.5
Total	82	100.0	82	100.0	164	99.9

TABLE 13

NUMBER OF DEGREES HELD BY MEDICAL FRESHMEN RESPONDENT FATHERS AND MOTHERS

Number of Degrees	Fathers		Mothers		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
1 Degree	6	7.3	5	6.1	11	6.7
2 Degrees	12	14.6	1	1.2	13	7.9
3 Degrees	2	2.4	1	1.2	3	1.8
None	62	75.6	75	91.5	137	83.5
Total	82	99.9	82	100.0	164	99.9

TABLE 14

MAJOR SUBJECTS IN COLLEGE OF 30[a] FATHERS OF MEDICAL FRESHMAN RESPONDENTS

Major Subjects	Number	Per Cent
Biological Science	9	30.0
Accounting	5	16.7
Humanities	4	13.3
Law	4	13.3
Engineering	3	10.0
Premedical	3	10.0
Chemistry	1	3.3
Mathematics	1	3.3
Total	30	99.9

[a] 52 Fathers did not attend college

TABLE 15

MAJOR SUBJECTS IN COLLEGE OF 13[a] MOTHERS
OF MEDICAL FRESHMAN RESPONDENTS

Major subjects	Number	Per Cent
Languages	5	38.4
Humanities	2	15.4
Social science except sociology	2	15.4
Biological science	1	7.7
Education	1	7.7
Nursing	1	7.7
Sociology	1	7.7
Total	13	100.0

[a] 69 Mothers did not attend college

TABLE 16

EXTENT OF CATHOLIC EDUCATION OF
MEDICAL FRESHMEN RESPONDENT
FATHERS AND MOTHERS

Category	Fathers		Mothers		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
No Catholic education	41	50.0	38	46.4	79	48.1
1-7 elementary grades	1	1.2	15	18.3	16	9.7
Completed elementary	15	18.3	9	11.0	24	14.6
1-3 years high school	1	1.2	8	9.7	9	5.4
Completedhigh school	10	12.2	9	11.0	19	11.5
1-3 years college	-	-	-	-	-	-
Completed college	5	6.1	-	-	5	3.4
1-2 years graduate or professional	-	-	1	1.2	1	0.6
3 or more years graduate or professional	2	2.4	-	-	2	1.2
Do not know	7	8.5	2	2.4	9	5.4
Total	82	99.9	82	100.0	164	99.9

Academic Background of Medical Freshmen in Sample.--As undergraduate college students the medical freshmen majored in a biological or physical science (Table 17). Somewhat less than a third of them had attended the parent university of their medical school (Table 18).

Of the 82 medical students 51 (62.2 per cent) obtained a Bachelor's degree (Table 19); 40 (48.8 per cent) completed college in a Catholic institution. Very few (6.0 per cent) medical freshmen admit to having participated in no extra-curricular activities at all as undergraduates.

Table 20 shows the kinds of extracurricular activities premedical students tend to enter. Most popular during their undergraduate years are special interest clubs, athletics, and social fraternity.

TABLE 17

MAJOR SUBJECTS IN COLLEGE OF MEDICAL FRESHMEN RESPONDENTS

Major subjects	Number	Per Cent
Biological sciences	54	65.8
Chemistry	12	14.6
Premedical	9	11.0
Humanities	3	3.7
Social science except Sociology	2	2.4
Languages	1	1.2
Zoology	1	1.2
Total	82	99.9

TABLE 18

NAME AND LOCATION OF PREMEDICAL COLLEGE(S)
OF MEDICAL FRESHMEN SAMPLE

Name	Location by State	Number	Per Cent
Loyola	Illinois	27	33.0
Detroit	Michigan	4	4.9
St. Mary's	Minnesota	4	4.9
John Carroll	Ohio	4	4.9
St. Procopius	Illinois	4	4.9
University of Illinois	Illinois	4	4.9
St. Vincent	Pennsylvania	3	3.7
Carroll	Montana	3	3.7
DePaul	Illinois	2	2.5
St. Louis	Missouri	2	2.5
Xavier	Ohio	2	2.5
Rutgers	New Jersey	1	1.2
Loyola	California	1	1.2
University of Wisconsin	Wisconsin	1	1.2
Northern Univ. of Ohio	Ohio	1	1.2
Geneva	Pennsylvania	1	1.2
San Diego	California	1	1.2
St. John	New York	1	1.2
St. John	Minnesota	1	1.2

TABLE 18 - Continued

Name	Location by State	Number	Per Cent
Seton Hall	New Jersey	1	1.2
Knox	Iowa	1	1.2
University of Cincinnati	Ohio	1	1.2
St.Mary of the Springs	Ohio	1	1.2
Northwestern	Illinois	1	1.2
Miami	Ohio	1	1.2
Marquette	Wisconsin	1	1.2
Fordham	New York	1	1.2
Valparaiso	Indiana	1	1.2
Fairfield	Connecticut	1	1.2
Holy Cross	Massachusetts	1	1.2
Scranton	Pennsylvania	1	1.2
North Central	Illinois	1	1.2
St. Norbert	Wisconsin	1	1.2
IIT	Illinois	1	1.2
Total		82	100.0

TABLE 19

TYPE OF COLLEGE OR UNIVERSITY DEGREES HELD BY MEDICAL FRESHMEN IN SAMPLE

College or University Degrees	Number	Per Cent
Bachelors	51	62.2
Masters	-	-
Doctorates	-	-
No Degrees	31	37.8
Total	82	100.0

TABLE 20

UNDERGRADUATE EXTRA-CURRICULAR ACTIVITIES
OF MEDICAL FRESHMEN RESPONDENTS

Extra-curricular Activities	Number	Per Cent
Special interest groups- e.g., science, language clubs	41	31.7
Athletics, varsity or intramural	30	22.4
Social fraternity	16	12.0
Religious organization	10	7.5
Music-e.g., band, chair, orchestra	8	6.0
None	8	6.0
Student government	5	3.7
Journalism	5	3.7
Job	4	3.3
Honorary and professional fraternities- e.g., Alpha Epsilon, Phi Beta Kappa	2	1.4
Others	2	1.5
Young Democrats	1	0.7
Total	134	99.8

Independent Variable--Social Class.--The concept of social class is used throughout this dissertation to refer to the kinds of psychological and social characteristics found differentially distributed among medical students classified by a weighted index of their father's occupation and education. Furthermore, the term "lower class" will refer to those medical students who are classified as lower or lower-middle class by Hollingshead's Two Factor Index of Social Position, the terms "higher classes" will refer to medical students classified as upper or upper-middle class on this index.[10]

Hollingshead's Two Factor Index of Social Position is employed in the present study. The two factors are: a) education and b) occupation. Each factor is given a weighted score on the seven-point and four-point scale (occupation 7, and education 4), and this score is multiplied by a factor weight which is derived from a standard regression formula. The sum of an individual's scores on the two factors determine his placement in one of five social classes, which range from a high of I to a low V. In this and other studies, Class I is designated as upper class, II the upper-middle class, III the lower middle class, IV the upper-lower class, and V the lower-lower class.[11]

[10]August B. Hollingshead, Two Factor Index of Social Position (New Haven: Yale University Press, 1956).

[11]Ibid.

Table 21 presents the social class distribution of the sample of the present study. The number of cases in Class II and Class V (Table 21) was too small to allow for statistical analysis of the association between social class, academic achievement, stress-anxiety responses, cynicism-idealism, and the internalization of professional attitudes in the study. It was thought advisable, therefore, to combine class I and class II into a single category and class IV and class V into another.

Academic Achievement (AA).[12]--Academic achievement is measured in this research by the following criteria:

Previous

a) Average Grade in College (AGC)
b) The Medical College Admission Test (MCAT)

Current

a) Medical students' grades received at the end of each academic year.
b) Rank of each medical student in his class at the end of each academic year.

[12]The letters (AA); (SA); (SC); (CI); (IPA); (MCAT); (AGC); (S_1); (S_2); (S_3); and (S_4) were utilized in the programming of this research on the 1401 and 1620 (Fortran) IBM computer. The meanings of these letters are: AA: academic achievement; SA: stress-anxiety responses; SC: social class; IPA: internalization of professional attitudes; MCAT: medical college admission test; S_1: verbal ability; S_2: quantitative; S_3: general information; S_4: science. S_1, S_2, S_3, and S_4 comprise the MCAT.

TABLE 21

SOCIAL CLASS[a] DISTRIBUTION OF MEDICAL FRESHMEN IN SAMPLE BY NUMBER AND PER CENT

Social Class Position		Number		Per Cent	
I	Class I	20	18	24.4	22.0
	Class II		2		2.4
II	Class III		29		35.4
III	Class IV	33	30	40.2	36.6
	Class V		3		3.6
Total			82		100.0

[a] The number of cases in Class II and Class V was too small to allow for statistical analysis of the association between social class, academic achievement, stress-anxiety responses, cynicism-idealism, and the internalization of professional attitudes in the study. It was thought advisable, therefore, to combine Class I and Class II into a single category and Class IV and Class V into another.

Stress and Anxiety Responses.--Taylor's Personality Scale of Manifest Anxiety[13] is utilized to measure the medical students' level of stress and anxiety. In a review of the literature it was pointed out that the Taylor Manifest Anxiety Scale has frequently been employed in investigations of anxiety and learning phenomena and significant conclusions have resulted from these studies.[14] The reliability of the Taylor Manifest Anxiety Scale had been reported as ranging from .81 to .96.[15] Taylor has presented evidence of the scale's validity. She obtained the distribution of scores for 103 neurotic and psychotic subjects, and found that the median score was equivalent to the .98 percentile for normal subjects. It was assumed that the former exhibit greater manifest anxiety than normals. She concluded that her findings seemed to indicate some relation between TMAS scores and clinical observations of manifest anxiety.[16]

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[13]Taylor, op. cit.

[14]Vincent D. Pisani, "The Effect of Promazine Hydrochloride on Anxiety as Measured by the Taylor Manifest Anxiety Scale," (unpublished M. A. Thesis, Department of Psychology, Loyola University), p. 5.

[15]Taylor, op. cit.

[16]Ibid.

In a study by Matarazzo, Guze and Matarazzo,[17] the Taylor Manifest Anxiety Scale was administered to a clinic sample of medical and psychiatric out-patients.

Pisani summarizing this report indicates that the authors hypothesized that

> if the Taylor Manifest Anxiety Scale measured anxiety and if it is true that psychiatric patients are more anxious than other patients, then the mean score of a sample of psychiatric patients should be greater than the mean score of a sample of psychiatrically healthy medical patients. The results showed that the means for the two psychiatric samples were clearly greater than the means of the two medical samples. Thus it was concluded that scores on the TMAS can with reasonable efficiency distinguish a psychiatric population from a non-psychiatric one.[18]

In a recent study by Lebo, Toal and Brick[19] an attempt was made to validate the Taylor Manifest Anxiety Scale directly by applying it to anxious subjects in a stress situation. A summary of this study revealed that

> The anxiety was then directly manipulated in that a certain number of them underwent carbon dioxide therapy to alleviate anxiety, while others were not treated therapeutically. A statistically significant improvement in the performance of the experimental group on the TMAS was obtained. This improvement was also seen in a check test, the Bender Gestalt. The results were interpreted as indicating the validity of the TMAS as a measure of manifest anxiety.[20]

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[17] J. D. Matarazzo, S. B. Guze, and R. G. Matarazzo, "An Approach to the Validity of the Taylor Anxiety Scale: Scores of Medical and Psychiatric Patients," Journal of Abnormal Social Psychology, 51 (1955), 276-280.

[18] Pisani, op. cit., p. 7.

[19] D. Lebo, R. A. Toal, and H. Brick, "Manifest Anxiety in Prisoners Before and After CO_2," Journal of Consulting Psychology, 22 (1956), 51-57.

[20] Pisani, op. cit., p. 8

On the whole, therefore, the more recent studies support the Taylor Manifest Anxiety Scale as being a valid measure of manifest anxiety.

Cynicism-Idealism Inventory.--In this study the concepts of idealism and cynicism are operationally utilized within the frame of reference established by sociologists Howard S. Becker and Blanche Geer.[21] Becker and Geer assert:

> It makes a difference in a man's performance of his work whether he believes wholeheartedly in what he is doing or feels that in important respects it is a fraud, whether he feels whole-heartedly that it is a good thing or believes that it is not really of much use after all. The distinction we are making is that one people have in mind when they refer, for example, to their calling as a "noble profession" on the one hand or a "racket" on the other. In the one case they idealistically proclaim that their work is all that it claims on the surface to be; in the other they cynically concede that it is first and foremost a way of making a living and that its surface pretensions are just that and nothing more . . . The cynic cuts corners with a feeling of inevitability while the idealist goes down fighting . . .
>
> The variability of idealistic attitude suggests that in using such an element of personal perspective in sociological analysis one should not treat it as homogenous but should make a determined search for subtypes which may arise under different conditions and have differing consequences. Such subtypes can presumably be constructed along many dimensions. There might, for instance, be consistent variations in the medical students' idealism through the four years of school that were related to their social class background. The medical students can be viewed as both idealistic and cynical depending on whether one has in mind their view of their school activities. (Italics added).

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[21]Howard S. Becker and Blanche Geer, "The Fate of Idealism in Medical School," American Sociological Review, XXII (February, 1958), 50-56.

> /A further analytic distinction/ Cynicism and idealism are not merely attributed of the person, but are as dependent on the person doing the attributing as they are on the qualities of the person to whom they are attributed. Though the student may see his particular patient as proper scientific objectivity, the layman may view this objectivity as heartless cynicism.[22]

Medical students in this sample are viewed as either idealistic or cynical (or ambivalent) during their pre-clinical years of medical school in terms of their school activities and futures they envision for themselves as physicians.

The Cynicism-Idealism Inventory is utilized to identify degrees of cynicism or idealism (or ambivalence) in the sample. This inventory consists of 30 questions in which "correct" answers are indicative of idealism; "incorrect" answers are indicative of cynicism.

The original draft of the Cynicism-Idealism Inventory consisted of 24 questions. It was then administered to a group of 14 senior medical students who were asked to answer these questions and then explain why they answered as they did.

With pertinent information from the pilot study, and additionally from suggestions received from members of the Department of Sociology of Loyola University, also from Dr. Edwin F. Rosinski (Director of Research in Medical Education, Virginia Medical College), Dr. John T. Cowles (President of the Maurice Falk Medical Fund), Dr. Osler L. Peterson (Medical School, Harvard

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[22] Ibid.

University), Dr. Thomas Hale Ham (Professor of Medicine and Chairman of the Committee on Medical Education at the School of Medicine, Western Reserve University), Dr. James Fremont Lyden (Washington University, Seattle), and Dr. H. J. A. Rimoldi (Department of Psychology, Loyola University) the final revised draft of the Cynicism-Idealism Inventory consisting of 30 statements was established.

Medical Student Attitude Inventory.--In this research proposal an attitude is operationally defined as "a general orientation of an individual toward his environment."[23]

The Medical Student Attitude Inventory utilized in this study was developed by Dr. Edwin F. Rosinski, Director of Research in Medical Education, Medical College of Virginia. The reliability coefficient for the entire inventory was .89.[24] This inventory measures attitudes towards the following objectives of medical education:

1. Respect for the dignity, self-esteem and value of man.
2. Compassion and perceptiveness in the care of patients and families.
3. Understanding the fundamental rights of the patients, professional colleagues and community.
4. Fundamental intellectual honesty including complete candor in recognizing his own ability and limitations.
5. Appreciation of the role of research, both clinical and basic.

[23] T. M. Newcomb, Social Psychology (New York: The Dryden Press, Inc., 1950). from Rosinski, "Professional, Ethical and Intellectual Attitudes of Medical Students," op. cit., p. 1017.

[24] Rosinski, op. cit.

6. Willing acceptance of the responsibilities for the initiating and continuing coordination of all the efforts directed for the patients' problems as they relate to himself.

7. Appreciation for his continued self-education whether it is in the medical school or as a practicing physician.[25]

These attitudes are measured through a card sorting device, not too dissimilar from the MMPI. There are ten statements for each objective; the first five are favorable statements, the remaining five are unfavorable. There are, therefore, 70 statements for the seven objectives, 35 favorable and 35 unfavorable.

The test procedure requires the test-taker to sort these statements, each imprinted on a separate card, under three headings: Agree, Undecided, Disagree. Following this preliminary sorting, he is asked to extract from the first group those statements with which he could Completely Agree, and from the third group those with which he would Completely Disagree. Scoring of each item is accomplished on a five-point scale (0-4) according to the degree of reaction to the attitude statement. When gathered into section scores the polar continuum would be represented by zero at one end and at the other by a positive figure whose magnitude would be 40. Therefore, the maximum score an individual can receive from the 70 attitude-statements is 280.[26]

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[25] Ibid.

[26] The format for the description of this section of the research was patterned after Rosinski, "Professional, Ethical and Intellectual Attitudes of Medical Students," op. cit. pp. 1016-1022.

Operational Definition of Professionalization.--The process of socialization has been generally recognized as a key dimension in the study of professions.[27] Leonard Reissman asserts that

> a student training for such a career achieves not only the necessary knowledge and skills, but at the same time is indoctrinated with a set of attitudes which are equally as necessary if he is to fulfill his professional role properly.[28]

Merton has succinctly defined this process for medical students as one in which they "are engaged in learning the professional role of the physician by so combining its components of knowledge and skills, attitudes, and values, as to be motivated and able to perform this role in a professionally and socially acceptable fashion."[29]

Professionalization, as it will be used in this study, is a process of socialization. In this context, Bloom notes that "it involves a matrix of social relations in which the medical student internalizes and makes his own the attitudes and values which will largely determine his future professional role."[30]

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[27]Leonard Reissman and Ralph V. Platou, "The Motivation and Socialization of Medical Students," Journal of Health and Human Behavior, I (Fall, 1960), 174-182.

[28]Ibid., p. 174.

[29]Merton, "Some Preliminaries to a Sociology of Medical Education," in The Student-Physician, p. 41.

[30]Samuel W. Bloom, "Some Implications of Studies in the Professionalization of the Physician," in Patients, Physicians and Illness, p. 313.

Statistical Procedures.--Student's "t" statistic is utilized in this research to obtain means, standard errors, standard deviations, the comparison of means from independent and dependent variables, the significance of differences between variables and probability.[31] The .05 level of significance was established as the point for the rejection of the null hypothesis.

Even though 75 (89.0 per cent) of the medical students were Catholic, drawn primarily from the Midwest and the school is under religious auspices, it is assumed that the students themselves, the elements in the selection process by the medical school, the undergraduate preparation, the level of competence of the students, the fact of multiple applications by the students to different medical schools, the fact that the medical school receives approximately ten applications for every student admitted, the common curricula requirements of medical education, all of these suggest that there is considerable assurance of typicality and randomness of student population in any case study of a given medical school.

The analysis of variance is utilized on scores (verbal, quantitative, general information, and science) of the MCAT and social class differences of medical students in the sample.[32]

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[31]Hubert M. Blalock, Jr., Social Statistics (New York: McGraw-Hill Book Company, Inc., 1960), pp. 144-153.

[32]S. Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Company, Inc., 1956), p. 109.

The 1401 and 1620 IBM electronic computers were used in analyses of means, standard errors, standard deviations, and "t" values for social classes (SC); stress-anxiety responses (SA): average college grade (AGC); Medical College Admission Test (MCAT); cynicism -idealism (CI); academic achievement (AA); and the internalization of professional attitudes (IPA).

CHAPTER III

SOME SELECTED ATTITUDES OF MEDICAL FRESHMEN TOWARD MEDICINE AND MEDICAL EDUCATION

This area of the study represents an effort to examine some selected attitudes of medical freshmen toward medicine and medical education. The purpose was to obtain further insight into possible interrelationships of the variables and the professionalization process of these students explored in chapters IV, V, and VI respectively.

An attempt was made to find out how medical students respond to the various topics covered in their admissions interviews; their opinions on the use of psychological tests and psychiatric interviews, as a regular part of the admissions procedure; the value of the Medical College Admission Test (MCAT)etc . . .

In addition, an effort was made to ascertain their political and professional preferences; whether lower class medical students experience more difficulty and/or less desire to become members of a fraternity. Attitudes with regard to factors influencing their judgment as to patient as a person were explored. Their sources of income, annual expenses, expected gross annual income were also analyzed. Finally, their motives for studying medicine were ascertained.

Medical Freshmen as Applicants to Medical School.--It was found (Table 22) that 50 (61.0 per cent) of the medical freshmen in the sample applied to from one to three different medical schools and 77 (93.9 per cent) applied to 1 to 3 different Catholic medical schools. Forty-six per cent of students in the sample were offered places in more than one medical school, but 19 (23.1 per cent) felt that circumstances forced them to accept a place at the present school of medicine, not their first choice (Table 23). The early acceptance date (Table 24) reported by some students may have contributed toward an explanation of these circumstances.

Of the 82 medical freshmen in the sample, 62 (75.6 per cent) did not take courses hoping to raise their average to aid their admission into a medical school (Table 25). Twenty-one (25.6 per cent) did not major in their field of greatest interest. Table 26 reveals that 12 of these 21 (54.2 per cent) students felt that it would enhance their chances of getting into a medical school, if they selected a less preferred undergraduate major.

The data presented in Table 27 indicate that medical students in Class II and III considered the general reputation of a school as the most important factor influencing their choice of a medical school, with geographical location of some importance to all three social classes. Social Class I indicated geographical location to be most important.

TABLE 22

NUMBER OF MEDICAL SCHOOLS APPLIED
TO BY MEDICAL FRESHMEN
RESPONDENTS

Number Applied To	Medical Schools		Per Cent	
	All	Catholic	All	Catholic
1 - 3	50	77	61.0	93.9
4 - 6	24	5	29.3	6.1
7 - 9	5	-	6.1	-
10 or more	3	-	3.6	-
Totals	82	82	100.0	100.0

TABLE 23

MEDICAL FRESHMEN'S OPINION ON BEING COMPELLED TO ACCEPT LOWER THAN FIRST CHOICE MEDICAL SCHOOL[a]

Reasons for feeling compelled to accept secondary choices	Number	Per Cent
a. Conflicting dates of notification by medical schools. Had to make a binding commitment at another school before hearing from first choice.	-	-
b. Fear of not being accepted by first choice.	1	1.6
c. Had such a strong desire to be accepted that first choice was accepted.	-	-
d. Ranked first and second choice schools almost equal, so it made little difference.	-	-
e. Accepted second choice, heard from first before commitment was due	2	3.1
f. Almost accepted second choice school, heard from first choice before commitment was due	-	-
g. Rejected by first choice, so accepted second.	9	14.1
h. Financial reasons	-	-
i. Religion is important	2	3.1
j. More information in catalogue reading.	1	1.6
k. Closer to home	-	-

TABLE 23-Continued

Reasons for feeling compelled to accept secondary choices	Number	Per Cent
l. Location and church	3	4.6
m. Advice from physician	1	1.6
n. No other alternative, admitted only to Loyola	45	70.3
Total	64[a]	100.0

[a]Of the 82 medical freshmen, 18 (21.8 per cent) listed their present school of medicine as their first choice of a medical school.

TABLE 24

FRESHMAN MEDICAL REPORTS ON
DATE OF FIRST ACCEPTANCE

Date of first acceptance to 1962 medical class		Number	Per Cent
Before January	1961	1	1.2
January - July	1961	1	1.2
August	1961	-	-
September	1961	14	17.1
October	1961	9	11.0
November	1961	6	7.3
December	1961	11	13.4
January	1962	8	9.8
February	1962	8	9.8
March	1962	8	9.7
April	1962	2	2.4
May	1962	4	4.8
June	1962	2	2.4
July	1962	6	7.3
August	1962	-	-
September	1962	2	2.4
Total		82	99.9

TABLE 25

NON-DEMANDING ELECTIVES TAKEN
TO BUILD AVERAGE TO AID
ADMISSIONS

Courses Taken to Aid Admission to Medical School	Number	Per Cent
None	62	75.6
One	5	6.1
Two	8	9.8
Three or more	7	8.5
Do not know	-	-
Total	82	100.0

TABLE 26

INFLUENCING FACTORS OF MEDICAL FRESHMEN SAMPLE IN THE SELECTION OF A LESS PREFERRED UNDERGRADUATE MAJOR[a]

Reason for Selection of a Less Preferred Major	Much[b]	
	No.	Per Cent
Advice of College adviser	5	23.8
Thought it would enhance chances of getting into medical school	12	57.1
Advice of major professor	2	9.5
Advice of medical school	-	-
Advice of parents	1	4.8
Advice of family physician	1	4.8
Total	21	100.0

[a] Of the 82 medical freshmen, 21 (25.6 per cent) did not major in their undergraduate field of greatest interest; 61 (74.4 per cent) did.

[b] The remaining categories were "some", "None", and "do not know".

TABLE 27

MEDICAL FRESHMEN RESPONSES TO INFLUENCING FACTORS IN SELECTION OF A MEDICAL SCHOOL BY SOCIAL CLASSES

Influencing Factors	SOCIAL CLASS I N = 20						SOCIAL CLASS II N = 29						SOCIAL CLASS III N = 33						TOTAL	
	MUCH		SOME		NONE		MUCH		SOME		NONE		MUCH		SOME		NONE			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
General Reputation of School	5	6.1	13	15.8	2	2.4	16	19.5	13	15.9	--	---	11	13.4	16	19.5	6	7.3	82	99.9
Geographic Location	8	9.1	9	11.0	3	3.6	13	15.8	11	13.4	5	6.1	18	22.0	5	6.1	10	12.2	82	100.0
Contacts with Medical Students	3	3.6	11	13.4	6	7.3	8	9.8	12	14.6	9	11.0	4	4.8	13	15.8	16	19.5	82	100.0
Estimated Cost, Tuition	2	2.4	5	6.1	13	15.8	3	3.6	18	21.9	8	9.8	11	13.4	9	11.0	13	15.9	82	99.9
Advice of Premedical Adviser	1	1.2	4	4.8	15	18.2	5	6.1	6	7.3	18	22.0	2	2.4	7	8.5	24	29.2	82	100.0
Study of School Catalogues	5	6.1	5	6.1	10	12.2	4	4.8	12	14.6	13	15.8	--	--	14	17.1	19	23.2	82	100.0
Advice of Family Physician	5	6.1	3	3.6	12	14.6	3	3.6	9	11.0	17	20.8	--	--	9	11.0	24	29.2	82	99.9
Study of "Admissions Requirements of American Medical Colleges"	5	6.1	5	6.1	10	12.2	4	4.8	10	12.2	15	18.3	6	7.3	2	2.4	25	30.5	82	100.0
Advice of Parents	3	3.6	9	11.0	8	9.8	--	--	14	17.1	15	18.3	4	4.8	8	9.8	21	25.6	82	100.0
Advice of Medical School Alumni	1	1.2	6	7.3	13	15.8	2	2.4	3	3.7	24	29.3	2	2.4	2	2.4	29	35.4	82	99.9
Other	10	12.2	--	--	10	12.2	16	19.5	1	1.2	12	14.6	15	18.3	2	2.4	16	29.5	82	99.9

Medical Students' Attitudes Toward the Admissions Process.--Medical students in the sample found the application procedures of the school to which they were finally admitted to be valuable (Table 28). Ten (12.2 per cent) indicated that their attitudes were unfavorable. The reasons for these unfavorable attitudes are due partially to the difficulties of obtaining recommendations from pastors with whom they had little or no acquaintance. This situation was intensified especially if a student had moved to several parishes within a short period of time. As to application procedures of other medical schools, 17 (20.8 per cent) of the students asserted unfavorable attitudes (Table 29).

The reasons attributed were overly detailed information on the applicant or the requirement of a preliminary statement of information after which a long period elapsed before a final application form was received. Students indicated that the waiting period between two sets of application forms was unnecessary since such a procedure intensified the pressures and strains encountered in the process of gaining admission into a medical school.

Psychological tests other than the MCAT were administered to 4 (4.8 per cent) of the entering medical freshmen (Table 30). Tables 31 and 32 reveal that fewer students expressed a lower opinion of psychiatric interviews in contrast to psychological tests as regular part of the admissions procedure. Twenty-four

(29.2 per cent) of the medical freshmen in the sample expressed unfavorable attitudes toward the use of the Medical College Admission Test (Table 33). Their main objections were that the results of the MCAT were contingent upon the emotional frame of the student's mind at the time the test was taken. They asserted that "a poor night's rest" or "any temporary disturbing factor" may completely affect the scores on the MCAT. The length and format of the test were given as reasons for questioning its value. Additionally, medical freshmen noted that the mere fact that the MCAT carried "a lot of weight" as an essential factor of being admitted to a medical school tends to affect their performance adversely. Students indicated that they were "scared stiff" of the MCAT.

As undergraduate students they were briefed by medical students and instructors that the MCAT was "tough," and the thought that "one cannot study for the MCAT" seemed to have augmented their self-doubts as to their intellectual adequacy of obtaining a reasonable score. Students' doubts as to their own intellectual inadequacies seem to be increased by the MCAT itself.

Of the 54 (65.9 per cent) medical freshmen who expressed a favorable opinion of the MCAT, 22 (42.6 per cent) asserted that this test was valuable as an additional means of selecting college students who were capable of completing an M. D. degree.

Medical freshmen in the sample were favorably disposed toward the use of interviews as a regular part of the admissions procedure (Table 34). Students suggested that a more systematic and intensive interview would enhance the quality of the admissions procedure. Among the various topics covered in the interviews, "motives for wishing to study medicine" occurred most often (Table 35).

TABLE 28

MEDICAL FRESHMEN'S OPINION OF APPLICATION PROCEDURES OF MEDICAL SCHOOL NOW ATTENDING

Attitude toward Admission Procedures of Medical School Now Attending	Number	Per Cent
Very valuable	10	12.2
Valuable	62	75.6
Not Valuable	10	12.2
Not at all Valuable	-	-
Do Not Know	-	-
Total	82	100.0

TABLE 29

MEDICAL FRESHMEN'S OPINION OF APPLICATION PROCEDURES OF OTHER MEDICAL SCHOOLS APPLIED TO

Impression of Other Schools	Number	Per Cent
Very Valuable	9	11.0
Valuable	51	62,2
Not Valuable	17	20.8
Not At All Valuable	1	1.2
Do Not Know	4	4.8
Total	82	100.0

TABLE 30

MEDICAL FRESHMEN REPORT ON USE OF MEDICAL COLLEGE ADMISSION TEST OF SCHOOL NOW ATTENDING

Response	Number	Per Cent
Other Tests Taken	3	3.6
Other Tests Not Taken	78	95.1
Do Not Know if Other Tests Were Taken	1	1.2
Total	82	99.9

TABLE 31

MEDICAL FRESHMEN'S OPINION OF PSYCHIATRIC INTERVIEW AS REGULAR PART OF ADMISSION PROCEDURES

Opinion of Psychiatric Interview	Number	Per Cent
Very Valuable	21	25.6
Valuable	39	47.6
Not Valuable	14	17.1
Not At All Valuable	2	2.4
Do Not Know	6	7.3
Total	82	100.0

TABLE 32

MEDICAL FRESHMEN'S OPINION ON USE OF PSYCHOLOGICAL TESTS AS REGULAR PART OF ADMISSION PROCEDURES AT MEDICAL SCHOOL NOW ATTENDING

Opinion of Psychological Tests	Number	Per Cent
Very Valuable	12	14.6
Valuable	40	48.8
Not Valuable	24	29.3
Not At All Valuable	-	-
Do Not Know	6	7.3
Total	82	100.0

TABLE 33

MEDICAL FRESHMEN'S OPINION ON THE VALUE OF THE MEDICAL COLLEGE ADMISSION TEST

Opinion of MCAT	Number	Per Cent
Very Valuable	5	6.1
Valuable	49	59.8
Not Valuable	21	25.6
Not At All Valuable	3	3.6
Do Not Know	4	4.8
Total	82	100.0

TABLE 34

MEDICAL FRESHMEN'S RATING OF INTERVIEWS EXPERIENCED AT SCHOOL NOW ATTENDING

Impression of Interview	Number	Per Cent
Very Valuable	8	9.8
Valuable	47	57.3
Not Valuable	26	31.7
Not At All Valuable	1	1.2
Do Not Know	-	-
Total	82	100.0

TABLE 35

TOPICS COVERED IN MEDICAL FRESHMEN'S INTERVIEW

Interview Topics	Number	Per Cent
Motives for wishing to study medicine	64	18.7
Cultural interests	51	14.9
Specific scientific interests	45	13.2
Physical health	44	12.8
Ability of applicant to withstand stress	42	12.2
Mental Health	35	10.3
Early development of applicant	32	9.4
Knowledge of current events	20	5.8
Ability to pay tuition fees	4	1.2
Social prejudice	2	0.6
Marriage	1	0.3
Scientific method	1	0.3
Moral obligation of doctor to patient	1	0.3
Total	342 *	100.0

* The above topics were not mutually exclusive.

Political Preferences, Attitudes Toward Socialized Medicine, and Membership in Fraternities.--In terms of political preferences, 33 (40.2 per cent) of the medical freshmen claimed to be Democrats, 28 (34.2 per cent) Republicans and 19 (23.1 per cent) asserted no political preference (Table 36). It seemed that a substantial number identified political party preference primarily because their parents were either members of the Democratic or Republican party. Over 90 per cent were opposed to the Kennedy Administration on the basis that such bills as "Medical Care for the Aged" were steps toward socialized medicine. Ninety-nine per cent of the medical freshmen were opposed to the introduction of socialized medicine into the United States.

The most prevalent reasons submitted by students in the sample to justify the exclusion of socialized medicine into the United States were the following: "It (socialized medicine) takes away the doctor's freedom" and "the physician would be another civil servant; he would be paid a salary which is not commensurate to his services and to his education." In this connection, freshmen in the sample were favorably disposed to the American Medical Association. The favorable attitude was rooted to the AMA's attempt to block any form of socialized medicine creeping into the present practice of American medicine. In this context, students spoke of the AMA as the "most powerful union in the United States." As to the American College of Surgeons,

73 (89.0 per cent) of the respondents were unaware of its existence and hence knew very little of its functions other than "it protects the surgeon."

Medical students on the whole experienced little difficulty in becoming members of either of the two national medical fraternities. Social class position apparently was not an impediment in becoming members of a fraternity. Students became fraternity members primarily because "old tests" were available to enable them to pass examinations; others thought that the mere fact of living and studying with other medical students would enhance their chances of successfully completing the first year of medical school.

As a participant observer in a fraternity setting the writer wishes to narrate rather briefly some of the spontaneous comments made by medical students in the sample concerning medicine and medical education. Some of these statements are: "I worked just as hard in college . . . . in medical school I do not know what to study . . . . more pace to it and bulk. The examination does not prove anything. This is all memory stuff . . . . do not have time to think and to read other material. Once I complete the second year I got it made."

A student who was troubled by a low grade made in a previous test asserted (as he was preparing to take another examination the following day) "Boy, I'm scared . . . . so much to do. I'm

way behind. I wonder if it is worth it. I entered medical school to make a comfortable living, but it seems I don't like it with such a low test . . . . if I continue and flunk out I'll be one thousand dollars in debt . . . . what would my girl say or what will Dad think--will he be affected by his heart trouble?

The same student continues, "It makes quite a difference if you do not have 'Embryo' and 'Histo' before. I never had a practical exam with a microscope and it is somewhat difficult to cope with the guys. I'm fed up . . . . so much to do in so short a space of time."

A month before the final examinations students appear to be under severe strain, physically and mentally. It is not uncommon for students in a fraternity setting to remark that "this month is taking its toll on me . . . . wish I was doing something else. This is terrible. The material is so much, and there is so much memory. I'm just studying to pass. This stuff is so much it is miserable. How can I comprehend so much? Much time has been wasted in the lab. However, somewhere along the line this medical school hits the student in the clinical years . . . . and boy, they turn out good doctors, better than others."

As the final examination approaches, the students assert that "I'm just waiting for June 15--just want to get out of here and do something else in Summer--away from the books. I don't learn anything in school . . . . I spend so much time there and

I'm so tired when I return. I learn by studying by myself. I have to get on the ball. I am not producing as I should. I'm so fed up of this stuff. This is boring. I hope I'll make it through Bio-chem. I'm so sick of studying."

At the completion of the final examinations, the student now returns to the fraternity house and he remarks, "It's now over with. Boy, it (the examination) was tough, but it's behind me now. I couldn't care less. All that I want to do is to get stiff tonight and lots of sleep before I go home. This year I'd never repeat, even if I'm paid a million dollars by the Dean. I can make a buck somewhere else. This year was murder, but I suppose this is the way you become a doctor."

The medical student returns in October as a sophomore. He is regarded by incoming freshmen as an upper classman. He informs the incoming freshmen in a very subtle way that he "knows the ropes" of medical school. He extends an invitation for a "drink" at the nearby bar. Casually, he exerts his superiority and acts as an adviser. He turns to his bewildered acquaintances, "Join this fraternity when the time comes . . . . it is a darn good frat house. The boys really help to get you out of trouble. They know the ropes. They can tell you how to study. I'll tell you something. Stay clear of the Dean. Don't go in and ask for advice if you are in trouble. They'll know about you. Ask the guys in the frat house and they will pull you through. Don't let

any of those profs know who you are. Be anonymous as hell, but study like crazy. Don't let the stuff pile up. Get on top of it and use old tests. Those old tests are darn good. They repeat most of that stuff every year. I couldn't pass except for those old tests. They saved my life. Another thing is this: get out once a month. Go to the frat parties and just let off steam. It's good for you. There are lots of gals in this area, especially nurses from 'County' and 'Presby.' You can get a good time if you want."

The incoming freshman is more perplexed after listening to the "professional advice" from his sophomore "advisers." As medical school commences the freshman accepts or rejects the advice of his fraternity brothers according to his moods and uncertainties.

TABLE 36

POLITICAL PREFERENCE OF MEDICAL FRESHMEN SAMPLE

Preference	Number	Per Cent
Republican	28	34.2
Democrat	33	40.2
Independent	2	2.4
None	11	13.4
Do Not Know	8	9.8
Total	82	100.0

Some Motives for Entering Medicine, Attitudes Toward Medical School, Teachers, Medical Organizations.--The reasons for choosing a vocation are complex. A comprehensive explanation would require a thorough analysis of each individual life-history to discover not only the positive forces behind his choices but also why each potential alternative was not selected. Such detailed analyses were not possible in this area of the study.

In general, human service ("helping humanity"), professional satisfaction, prestige, autonomy, and financial earnings were the responses received to an open-ended question in the structured interview schedule.[1]

Although human service ("helping humanity") was submitted as a reason for choosing the medical profession by 76 per cent of the medical respondents, slightly more than 11 per cent were willing to extend their services beyond the boundaries of the United States upon the completion of their studies as a practicing physician. Students on the whole were reluctant to practice the medical profession overseas, to join an international medical organization such as WHO or MEDICO.

The medical students' expressed unwillingness to extend their services as future physicians among people in other countries indicates some degree of localized definition of humanity.

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[1]This question reads, "Do you have any particular reason(s) for choosing the medical profession?" Two categories were presented: "yes," and "no," followed by "If 'yes' what are some of the reasons?"

As one respondent asserted, "Sure, I want to be a physician, but I'm not going to those countries to suffer from diseases. I'm already suffering in medical school. When I get out of here and finally settle down, I want to live a little. I want to do some hunting, fishing, and have a good income to live on."

When the medical students were asked, "Among the various professions, which do you think possesses the greatest prestige in the United States?" Seventy per cent named medicine; 10 per cent, the priesthood; 9 per cent, politics; 6 per cent, teaching 4 per cent law; and less than 0.5 per cent, any field of social science.

In effect, therefore, human service and prestige seem most important in the choice of the medical profession by respondents in the sample. The other professions mentioned are seen as acceptable alternatives in such small percentages that they probably have not been accorded really serious consideration by the medical students.

Pertinent to the reasons for choosing the medical profession, a study by Cartwright and a group of Edinburgh students indicates that "professional satisfaction (in medicine) has emerged as the most important factor in determining the students' choice of career . . . . professional satisfaction was the factor most often thought to be of first importance, and only 5 per cent of the students did not regard it as the first or second consideration."[2]

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[2]Ann Cartwright and A Group of Edinburgh Students, "The Career Ambitions and Expectations of Medical Students," Journal of Medical Education, XXXV (March, 1960), 251-257.

Medical freshmen in the sample generally expressed favorable attitudes towards their medical school, with the exception that the physical facilities were inadequate. Slightly more than 30 per cent asserted that it would make no difference whether or not the medical school was under religious auspices.

Nearly 60 per cent of the medical respondents reported that they would prefer a teacher with an M. D. rather than a Ph. D. degree. They indicated that pre-clinical teachers should be more interested in teaching medical students the basic and fundamental concepts of medicine rather than some aspect of their ongoing research. It is not uncommon for medical students in informal gatherings such as fraternity parties to assert that "most of this stuff we get at the beginning we will never use in practice . . . . quite a lot of it is garbage . . . . I come here to learn medicine and not to memorize a whole set of trash which is useless." Students further report that pre-clinical teachers should show a more personal concern for and attention to the needs of the medical student. Slightly more than 80 per cent indicated that their pre-clinical teachers were "over-specialized." This "over-specialization" seemed to make the pre-clinical professor a "poor teacher" in the mind of the medical student;

A partial explanation for the above attitudes toward pre-clinical teachers could be attributed to the fact that "by and large, the atmosphere into which the medical student is initially

introduced is dominated by attitudes more autocratic than those of the clinical years which represent, for him, an educational setting of greater relevance."[3] Rosinski and Miller assert that

> There is nothing here to suggest that the basic science years are absolutely autocratic or the clinical years absolutely democratic, but rather that these are attitudinal faculty overtones which may carry over into behavior. Certainly the first two years are generally more prescribed, regulated, and regimented than the latter two. Whether this is determined by the difference in subject matter or faculty attitudes is open to speculation; but one is drawn toward the latter explanation.[4]

Medical respondents in the sample regard the pre-clinical years of medical school to be "drudgery," "dull," "hard work," "lots of memory," a "grind." It appears that the essential motivating force that keeps these students in the pre-clinical years of medicine is their eagerness to get into the clinical years of medical school, and ultimately to become physicians. They look forward with hope and joy when the "grind" of the sophomore year will all be over with, and finally to be ushered into the "more interesting and exciting years" of medical school. Often the pre-clinical student asserts that "in the clinical years we will be dealing with patients all the time, oearning 'real' medicine . . . . this is the time I'll enjoy medicine. Now it is sweat and tears. This sophomore year is bad, tougher than the freshman

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[3]Edwin F. Rosinski and George E. Miller, "A Study of Medical School Faculty Attitudes," Journal of Medical Education, 37 (February, 1962), 112-123.

[4]Ibid.

year . . . . but one good thing is: I know how to study; I know what the boys (teachers) want."

As a participant observer in a fraternity setting, the writer found it interesting to observe a clinical medical student, dressed in white, stethoscope protruding rather visibly from his rear pants' pocket, a can of beer in his right hand, a smile on his face advising a perplexed sophomore student who is preparing for a major pathology examination. The clinical medical student turns to the bewildered sophomore, "How are the rookies doing?" "They lock themselves in the rooms, real studious; they study harder than we do last year," says the sophomore with a soft voice. "How are you doing and the sophomores at the house . . . . are you ready for the big Path exam?" the clinical student asks with an air of superiority. "Not good . . . . so many slides. I don't remember which is which," replies the sophomore. The clinical student, his can of beer almost empty, asserts, "Go through those 'Path' slides carefully; get some of the guys in a group and shoot those darn slides on a screen. You guys set up a practical of your own and see if you can identify the structures. In the exam they will ask for identification, diagnosis, treatment, and prognosis." He pauses.

"I'll tell you what . . . . for the written, go through Anderson's Synopsis of Pathology; study the Dean's notes and write something on that diagnosis. This diagnosis carries weight.

But, for heaven's sake, don't clutch. If you do, you've had it . . . . you'll get all mixed up. Make sure the oil immersion on the scope is O.K. before you take it to the exam. 'Path' is a big subject. It can pull you over in 'Pharm.' As you know, 'Pharm' is for the birds with those types of tests. It's like 'Bio-chem' in the freshman year. They deduct for every wrong answer . . . . it's better for you to flip a coin and the chances are you'll come out on top. What's your average now in 'Pharm'?" The perplexed sophomore replies, "Little below class average, a few points down . . . . I think if I can get a good grade in 'Path' I'll be all set, but those slides drive me out of my mind. I've been studying and studying those darn slides and they all look alike. How can one take a residency in 'Path'? Boy, one ought to be out of his mind to do something like this for the rest of his life."

The clinical student listens with a sarcastic smile to the woes of his fraternity brother as if to say "Tough luck brother . . . . this is the way the ball bounces . . . . this is the way it operates . . . . that's a rough outfit at 708." He leaves his sophomore friend more perplexed and confused. The clinical student sips the remaining drops of his beer, ready for another can. He walks around the fraternity house, as if he were already an M. D. making his evening rounds in a hospital ward, surveying his "patients."

The pre-clinical years of medical school are considered to be difficult and monotonous. The strains and fears encountered by medical students during these two years are alleviated not only by the thought of the students' mere entrance into the clinical years of medicine, but also at the expected professional satisfaction to be achieved at the completion of the M. D. degree, internship, and residency, as preliminaries to the practice of medicine.

Table 37 reveals that the elements which are felt to contribute significantly to the medical students' professional satisfaction vary somewhat for different groups. Class I students most frequently cite "diagnostic problems," "help for patients," and "contact with patients and families" as important factors in satisfaction. Class II students choose "contact with patients and families " and "opportunity to utilize skilled techniques" most often, while Class III students asserted that "the opportunity to utilize skilled techniques" and "contact with patients and families" are essential ingredients in obtaining professional satisfaction in their work as future physicians. What is "not important": research for all these social classes mentioned most frequently.

TABLE 37

SOME SELECTED FACTORS CONSIDERED TO BE
IMPORTANT TO FRESHMEN MEDICAL STUDENTS BY SOCIAL CLASS

Influencing Factors	SOCIAL CLASS I N = 20						SOCIAL CLASS II N = 29						SOCIAL CLASS III N = 33						TOTAL	
	Important		Not Important		No Opinion		Important		Not Important		No Opinion		Important		Not Important		No Opinion			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Diagnostic Problems	19	23.2	--	--	1	1.2	26	31.8	--	--	3	3.6	25	30.5	4	4.8	4	4.8	82	99.9
Contact with other professional people	14	17.1	3	3.6	3	3.6	26	31.7	3	3.7	--	--	22	26.8	5	6.1	6	7.3	82	99.9
Contact with patients and families over a considerable period of time	18	22.0	1	1.2	1	1.2	27	32.9	1	1.2	1	1.2	29	35.4	--	--	4	4.8	82	99.9
Opportunity to specialize	11	13.4	9	11.0	--	--	16	19.5	10	12.2	3	3.6	17	20.7	9	11.0	7	8.5	82	99.9
Opportunity to utilize skilled techniques	16	19.5	3	3.6	1	1.2	27	32.4	2	2.4	--	--	28	34.2	4	4.9	1	1.2	82	99.9
Opportunity for research	7	8.5	11	13.4	2	2.4	7	8.5	19	23.2	3	3.6	7	8.5	16	19.5	10	12.2	82	99.8
Gratitude for research	16	19.5	4	4.8	--	--	21	25.6	7	8.5	--	--	19	23.2	9	11.0	5	6.1	82	99.9
Status in the community	11	13.4	8	9.7	1	1.2	10	12.2	16	19.5	3	3.6	13	15.9	13	15.9	7	8.5	82	99.9
Help for patients	19	23.2	--	--	1	1.2	29	35.4	--	--	--	--	27	32.9	4	4.8	4	2.4	82	99.9
Financial reward	9	11.0	9	11.0	2	2.4	11	13.4	15	18.3	3	3.6	13	15.8	13	15.9	7	8.5	82	99.9
Other	1	1.2	--	--	19	23.0	10	12.2	--	--	19	23.2	6	7.3	4	4.9	23	28.1	82	99.9

It is worthy of note that among the various subjects presented in the freshman year, physiology appears to be most interesting. Forty-five (54.9 per cent)(Table 38) of the medical respondents asserted that physiology involves "reasoning" and "not sheer memory." It enables them to comprehend the "why" of bodily functions. Interest is generated in this discipline, because freshmen are cognizant of the fact that future studies in medicine will be dependent upon a thorough grasp of how the human body functions. The medical respondents report that it would be "an important subject in the clinical years of medical school."

Table 39 reveals that medical freshmen do not read the medical journals in the first year of medical school. The primary reasons submitted were: (a) inability to comprehend the scholarly articles and (b) the excessive amount of work to be accomplished in the freshman year prevents them "from being interested in anything else, but making the 75 per cent average required for passing the first year of medical school."

To some extent, therefore, the strains and pressures of preclinical students in the sample could be viewed and observed not only from their perspective actions in a positive behavioral context; the things they do, say, either in an informal or formal setting, but also in the areas that they do not participate in, such as the reading of the medical journals during the first and second years of medical school.

TABLE 38

SUBJECT(S) MOST IMPORTANT TO
MEDICAL FRESHMEN RESPONDENTS

Subject Most Important	Number	Per Cent
Anatomy	30	36.6
Physiology	45	54.9
Biochemistry	7	8.5
Histology	-	-
Total	82	100.0

TABLE 39

YEAR MEDICAL FRESHMEN INTEND TO READ
MEDICAL JOURNALS

Year	Number	Per Cent
Freshman Year	3	3.6
Sophomore Year	11	13.4
Junior Year	55	67.2
Senior Year	3	3.6
During Internship	1	1.2
During Residency	-	-
During Practice	3	3.6
Never	-	-
Do Not Know	6	7.3
Total	82	99.9

Interest in a Particular Branch of Medicine and Occupational Preference of Medical Respondents.--The attainment of professional satisfaction was stated to be an important ingredient when choosing a particular career by the pre-clinical students in the sample. Professional satisfaction was also prized rather highly both in the interest-choice of a particular branch of medicine and the occupational preferences envisaged by these students.

The association between interest in a particular branch of medicine (Table 40) and occupational preferences (Table 41) was most commonly found by students who intended to be general practitioners.

An essential aspect of the students' estimates concerning general practice was the problem of competition in the various specialities of medicine and the difficulty of obtaining higher qualifications both for research and teaching. Table 41 indicates that 30 (36.6 per cent) of the medical respondents would prefer general practice to the teaching of medicine. Additionally, students who preferred general practice thought that the long-term remuneration was better than that for either research or teaching.

TABLE 40

PARTICULAR BRANCH OF MEDICINE INTERESTED IN

BY MEDICAL FRESHMEN RESPONDENTS

Branches of Medicine	Number	Per Cent
General Practice	27	32.9
Internal Medicine	15	18.4
Do Not Know	8	9.8
Pediatrics	8	9.7
Surgery	6	7.3
Obstetrics and Gynecology	5	6.1
Psychiatry	5	6.1
Physical Medicine	2	2.4
Clinical Genetics	1	1.2
Research in Biochemistry	1	1.2
Pathology	1	1.2
Public Health	1	1.2
Radiology	1	1.2
Orthopedic Surgery	1	1.2
Total	82	99.9

TABLE 41

PREFERENCE OF MEDICAL FRESHMEN FOR TYPE OF PROFESSIONAL OCCUPATION

Type of Medical Professional Occupation	Number	Per Cent
General Practice	30	36.6
Research	3	3.6
Specialization	38	46.4
Teaching	5	6.1
Do Not Know	6	7.3
Total	82	100.0

Sources of Income, Annual Expenses, and Expected Gross Annual Income.--Medical respondents in the sample asserted that they do not have enough money to spend on clothing, cannot buy the books they need or meet other pressing expenses, primarily because they cannot obtain adequate income. The sources available to them are gifts from their family or friends, money earned while at school or on vacation, loans, and scholarships (Table 42). Parents represent one of the two largest single sources of income, but, on the average, they supply less than half of what is spent by the single student, and less than a third of what the married respondents need.

The mean yearly expenditure for married students in the sample was $3,500, including $1,250 tuition. For single students it was $2,130. Other selected annual expenses are indicated in Table 43.

If one takes into account that these students have already completed at least three years of college, and have not infrequently come to medical school in debt, it appears understandable that the high cost of medical education is a serious deterrent to some students. Glaser reports that "the increasing number of married medical students has complicated the problem, but the trend seems clearly established that there is no evidence of a reversal in it in the foreseeable future."[5]

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[5]Robert J. Glaser, "Medical Education Past, Present and Future," Phi Chi Quarterly, 58 (1961), 229-245.

In terms of the average yearly expenses incurred by medical respondents in the sample, it is apparent that even those parents with average incomes would find it almost impossible to meet the average student needs of $3,500 if married or $2,130 if single. At the same time, if one examines the proposition, so often heard, "of a poor family sacrificing everything to put a boy through medical school," such a proposition is only relative. A poor family, at best, can only help; a family in moderate circumstances will find it difficult to finance such an education out of income; and only the moderately well-to-do or rich can really afford it. Dean Lamar Soutter notes that "the medical student of today is largely on his own, financially. He must earn his support, borrow it, win scholarship aid or indenture himself to the government. This is typical of students throughout the country."[6]

In terms of expected gross annual income of medical respondents in the sample, it is interesting to note that of 25 students who expect an annual income of $20,000 and over, 12 (36.3 per cent) are from Class III in contrast to 4 (20.0 per cent) students in Class I (Table 44).

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[6]Lamar Soutter, "All the Ramifications of College Student Finances," The Fraternity Month (June, 1961), pp. 21-24.

TABLE 42

MEDICAL FRESHMEN'S SOURCES OF INCOME

Source	Number	Per Cent
Earnings	60	40.3
Family Support	66	44.3
Loans	12	8.0
Scholarships	9	6.0
Savings and Investments	2	1.3
Total	149	99.9

TABLE 43

ANNUAL SELECTED EXPENSES FOR MARRIED AND SINGLE MEDICAL FRESHMAN IN SAMPLE

Annual Expenses	Room and Board				Medical and Dental Care				Recreation (Including Vacations)				Transportation				Clothing				Books				Instruments			
	S		M		S		M		S		M		S		M		S		M		S		M		S		M	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0-500	3	3.7	--	--	54	65.9	5	6.1	63	76.8	4	4.9	68	82.9	7	8.5	63	76.8	5	6.1	74	90.2	7	8.5	55	67.0	7	8.5
501-1000	62	75.6	1	1.2	2	2.4	2	2.4	2	2.4	--	--	4	4.9	--	--	1	1.2	1	1.2	1	1.2	--	--	10	12.2	--	--
1001-1500	5	6.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1501-2000	--	--	3	3.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2001-2500	1	1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2501-3000	--	--	1	1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3001-3500	--	--	1	1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3501-4000	--	--	1	1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
None	--	--	--	--	2	2.4	--	--	--	--	--	--	--	--	--	--	3	3.4	--	--	--	--	--	--	1	1.2	--	--
Do Not Know	4	4.9	--	--	17	20.7	--	--	13	15.8	--	--	3	3.6	--	--	9	11.0	--	--	--	--	--	--	9	11.00	--	--
Total	75	91.5	7	8.4	75	91.4	7	8.5	78	95.0	4	4.9	75	91.4	7	8.5	76	92.4	6	7.3	75	91.4	7	8.5	75	91.4	7	8.5

TABLE 44

EXPECTED GROSS ANNUAL INCOME OF MEDICAL FRESHMEN IN SAMPLE BY SOCIAL CLASS

Expected Annual Income	SOCIAL CLASS I N = 20		SOCIAL CLASS II N = 29		SOCIAL CLASS III N = 33		TOTAL	
	No.	%	No.	%	No.	%	No.	%
5,000 - 9,000	-	-	4	13.8	1	3.0	5	6.0
10,000 -14,000	4	20.0	6	20.6	6	18.2	16	19.5
15,000 -19,000	7	35.0	8	27.6	10	30.3	25	30.5
20,000-and over	4	20.0	9	31.0	12	36.3	25	30.5
Do not know	5	25.0	2	7.0	4	12.1	11	13.4
Total	20	100.0	29	100.0	33	99.9	82	99.9

Some Factors Influencing the Medical Students' Attitude Toward the Patient as a Person.--Medical respondents were asked to rate seven selected factors influencing their judgment of the patient as a person.[8] It is interesting to note that item (c), "the same educational level," was the most important factor influencing the student's judgment that the patient is "a person like himself." Table 45 reveals that item (c) "the same educational level" is most important for all students irrespective of social class position. However, the items of least importance were varied by social class position of medical students in the sample.

Class I students asserted that item (a), "the same race," was not an important factor. In contrast, Class II and III students reported that items (f) "knowledge about his country" and (g) "ability to speak the English language" were not essential as influencing factors of their judgment that the patient is a "person like themselves."

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[8]This question reads, "In treating a patient, how would you rate the following items in influencing your judgment that he is a person like you?" Items were (a) the same race, (b) the same social class, (c) the same educational level, (d) the same religion, (e) knowledge about the United States, (f) knowledge about his country, and (g) his ability to speak the English language.

TABLE 45

SOCIAL CLASS ATTITUDE OF MEDICAL FRESHMEN IN SAMPLE WITH REGARD TO SOME SELECTED FACTORS INFLUENCING THEIR JUDGMENT THAT A PATIENT IS A PERSON

Selected Factors	SOCIAL CLASS I N = 20						SOCIAL CLASS II N = 29						SOCIAL CLASS III N = 29						TOTAL N = 82	
	Important		Not Important		No Opinion		Important		Not Important		No Opinion		Important		Not Important		No Opinion			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
The Same Race	--	--	20	24.4	--	--	4	4.8	24	29.2	1	1.2	--	--	24	29.3	9	11.0	82	99.9
The Same Social Class	2	2.4	18	21.9	--	--	4	4.8	25	30.5	--	--	6	7.3	23	28.1	4	4.9	82	99.9
The Same Educational Level	6	7.3	14	17.0	--	--	6	7.3	23	28.1	--	--	11	13.4	17	20.7	5	6.1	82	99.9
The Same Profession	3	3.6	16	19.5	1	1.2	3	3.7	25	30.4	1	1.2	6	7.3	23	28.1	4	4.9	82	99.9
The Same Religion	1	1.2	19	23.2	--	--	6	7.3	23	28.1	--	--	8	9.7	21	25.6	4	4.8	82	99.9
His Ability to Speak the English Language	2	2.4	18	22.0	--	--	2	2.4	27	32.9	--	--	6	7.3	21	25.6	6	7.3	82	99.9
From the Same Neighborhood	--	--	17	20.8	3	3.6	--	--	28	34.1	1	1.2	2	2.4	25	30.5	6	7.3	82	99.9

Summary.--The findings reported in this chapter tend to indicate that pre-clinical medical students seem to exemplify a great concern about the validity of the selection procedures. Students were more favorably disposed to psychiatric interviews in contrast to psychological tests, other than the MCAT, as a regular part of the admissions procedure.

A commitment to a political party by the medical student was in part due to parental influences. Students were opposed to the introduction of socialized medicine into the United States. They were favorably disposed to the AMA, and especially to the Association's attempt to block any form of socialized medicine growing in the present practice of American medicine.

Social class position was apparently not an impediment for pre-clinical students to become members of a fraternity. In an informal setting, such as a fraternity milieu, the strains and pressures encountered by the pre-clinical student of medicine are most apparent. The manner of his behavior, the way he speaks, the type of language he uses, the things he does, indicate to the participant observer that the pre-clinical years of medical school are indeed a "training for uncertainty."

In terms of the reasons for choosing the medical profession, human service, and prestige are given as the most essential factors. Students asserted that they would prefer a teacher with an M. D. degree rather than a Ph. D. degree during the pre-clinical

years of medical school. "Over-specialization," in their view, seemed to make the pre-clinical professor with a Ph. D. a "poor teacher."

In view of the strains and pressures of the pre-clinical years of medicine it seems that the essential motivating force that holds the students' interest in their academic pursuit is their eagerness to commence the clinical years of medicine, and ultimately to become physicians.

The strains and pressures of the pre-clinical years of medicine seem to be intensified in an informal setting such as a fraternity house, due to the role-playing, and the role-expectations of clinical students interacting with first and second year medical students. At times, an informal setting aids the student in his professionalization process, at other times, it strains and to some degree disrupts the socialization continuum of the pre-clinical medical student. If the latter prevails to any marked degree the possibilities are that the pre-clinical student becomes confused, bewildered, perplexed. As a result, the student's self-doubts as to his intellectual adequacy increases. He tends to assume that his own intellectual inadequacies are far greater and that a medical career is beyond him.

Among the various subjects presented in the freshman year, physiology appears to be most interesting. Interest is generated in this discipline because future studies in medicine would be dependent upon a thorough grasp of bodily functions.

In general, freshmen do not read the medical journals. Inability to comprehend the scholarly articles and the excessive amount of work in the pre-clinical years of medicine were reported as reasons.

Professional satisfaction was prized rather highly both in the choices of a particular branch of medicine interested in and the occupational preferences envisaged by students in the sample. At this early stage, the association between interest in a particular branch of medicine and occupational preferences was most commonly found by students who intended to be general practitioners. An essential aspect of the students' estimates concerning general practice was the problem of competition in the various specialities of medicine and the difficulty of obtaining higher qualifications both for research and teaching.

The mean yearly expenditure for married students in the sample was $3,500, including $1,250 tuition. For single students it was $2,130. Parents represent one of the two largest single sources of income, but, on the average, they supply less than half of what is spent by the single student, and less than a third of what the married respondents require.

In terms of seven selected factors influencing the student's judgment that a patient is a person, it is noted that "the same educational level" was the most important factor for all students irrespective of social class position. The items of least

importance were varied by social class position of medical respondents in the sample. Class I students asserted that "the same race" was not an important factor. In contrast, Class II and III students reported that "knowledge about his country" and "his ability to speak the English language" were not essential as influencing factors of their judgment that the patient is a "person like themselves."

CHAPTER IV

SOCIAL CLASS, AVERAGE GRADE IN COLLEGE, MEDICAL COLLEGE ADMISSIONS TEST, AND ACADEMIC ACHIEVEMENT IN MEDICAL SCHOOL

This chapter reports the findings on the hypothesized association between social class and academic achievement in medical school.

As indicated in Chapter II, the medical students used for testing this hypothesis were first divided into five social classes on the basis of Hollingshead's two-factor index of class position (based on their fathers' education and occupation). The number of cases in Class II and Class V was too small to allow for statistical analysis of the association between social class and academic achievement in medical school. Class I and Class II were combined in a single category and Class IV and Class V into another.[1] When regrouped, they were identified simply as I (formerly I and II), II, and III (formerly IV and V).

Academic Achievement by Social Class.--The hypothesis that academic achievement[2] at medical school is significantly influenced by social class position is not supported by the data of Tables 46,

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[1]See Table 21 showing the distributions for the latter.

[2]Academic achievement at medical school is measured by a) medical students' grades received at the end of each year (b) rank of each medical student at the end of each academic year.

47, and by Figure I.[2a] It may be observed that medical students in Classes I and III fall in slightly dissimilar academic levels on contract to Class II students whose academic achievement is greater. Although achievement differences of Class II students are greater than either Class I or III, these differences do not approach significance either at the .05 or .01 levels.

While the data of Tables 46, 47, and Figure I[3] do not provide evidence of a positive relationship between social class and medical school achievement, these data alone do not confirm the null hypothesis that social class does not significantly influence a person's chances for high academic achievement in the first year of medical school. These observed class similarities in academic achievement (in the first year of medical school) confirms the high intellectual abilities of all, established by the fact of admission to medical studies. Thus, there was need for further analysis to make sure that the acceptance of the null hypothesis (and hence the rejection of the hypothesized association between class and academic achievement in medical school) was a function of intellectual ability, aptitude, medical and undergraduate performance. Accordingly, association between academic achievement in

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[2a]Discussion of academic achievement here is based on performance in the first year.

[3]The heavy vertical lines indicate the range of variation in AA percentages for a given SC; the mean is represented by a small triangle▲; the blackened part of each bar comprises twice the standard error of the mean on either side of the mean; one half of each black bar plus the white bar at either end outlines one standard deviation on either side of the mean.

the first year of medical school and scores on the MCAT and the AGC (Average Grade in College) was measured to see whether social class is negatively related to medical school achievement over and beyond these two measures of potential for medical school work.

TABLE 46

MEANS, STANDARD DEVIATIONS, STANDARD ERRORS FOR MEDICAL FRESHMEN'S ACADEMIC ACHIEVEMENT IN MEDICAL SCHOOL BY THREE SOCIAL CLASSES

Social Classes	AA Means	Standard Deviations	Standard Errors
I	82.3490	3.7213	0.8321
II	82.9193	5.0668	0.9251
III	82.2975	3.8772	0.6749

N = 82

TABLE 47

DIFFERENCE IN MEANS, "t" TEST AND LEVELS OF SIGNIFICANCE FOR MEDICAL FRESHMEN'S ACADEMIC ACHIEVEMENT IN MEDICAL SCHOOL BY THREE SOCIAL CLASSES

Social Classes	Difference in Means	t	Significance
I and II	1.3226	-0.4312	NS [a]
I and III	1.0825	0.0475	NS
II and III	1.1307	0.5499	NS

N = 82

[a] No significance.

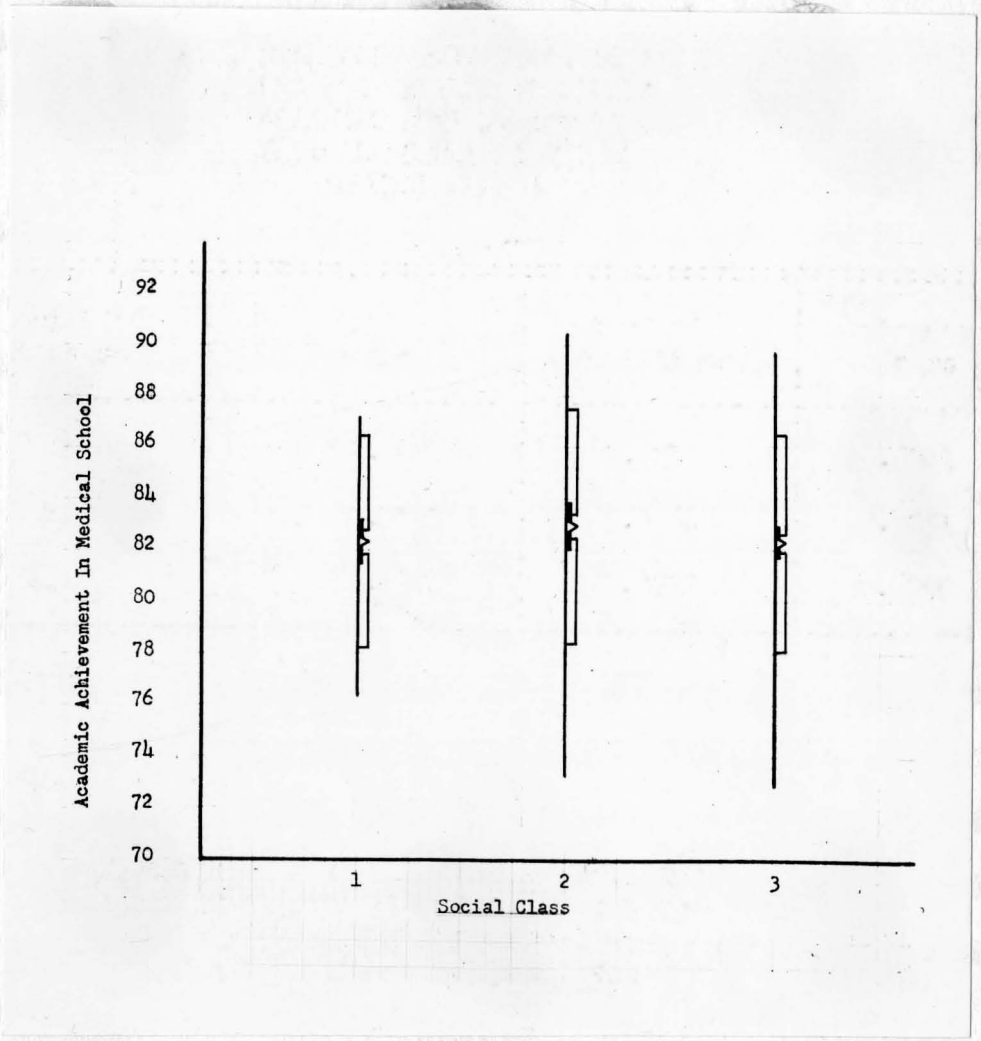

FIGURE 1

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN'S ACADEMIC ACHIEVEMENT IN MEDICAL SCHOOL BY THREE SOCIAL CLASSES

Social Class (SC), Average Grade in College (AGC), and Academic Achievement (AA).--The data presented in Tables 48, 49, and Figure 2 indicate that a medical student's social class position is not related to his undergraduate performance. It may be noted that medical respondents in Class II and III have strikingly similar undergraduate performance in contrast to Class I students, whose average grade in college[3a] (AGC) is slightly lower. Although undergraduate performances of Class II and Class III students are somewhat higher than Class I, these differences do not approach statistical significance at the .05 level.[4]

Similar findings are obtained for the investigation of AA and AGC (Table 50). The differences among the three academic groupings are not statistically significant at the .05 level. Figures 3, 4, and 5, reinforce the above statement, namely, that medical students with high AGC scores are not necessarily more often found at the upper levels of first year academic achievement in the sample group.

[3a]AGC is based on a 4 point system: A=4; B=3; C=2; and D=1.

[4]See Appendix Tables I-1 through I-3 showing the distribution for scores on the AGC by social class.

TABLE 48

MEANS, STANDARD DEVIATIONS, STANDARD ERRORS FOR MEDICAL FRESHMEN'S AVERAGE GRADE IN COLLEGE BY THREE SOCIAL CLASSES

Social Classes	AGC Means	Standard Deviations	Standard Errors
I	2.9215	0.2374	0.0531
II	3.0613	0.2758	0.0503
III	3.0603	0.2352	0.0409

N = 82

TABLE 49

DIFFERENCE IN MEANS, "t" TEST AND LEVELS OF SIGNIFICANCE FOR MEDICAL FRESHMEN'S AVERAGE GRADE IN COLLEGE BY THREE SOCIAL CLASSES

Social Classes	Difference in Means	t	Significance
I and II	0.0754	-1.8541	NS [a]
I and III	0.0669	-2.0750	NS
II and III	0.0644	0.0160	NS

N = 82

[a] No Significance.

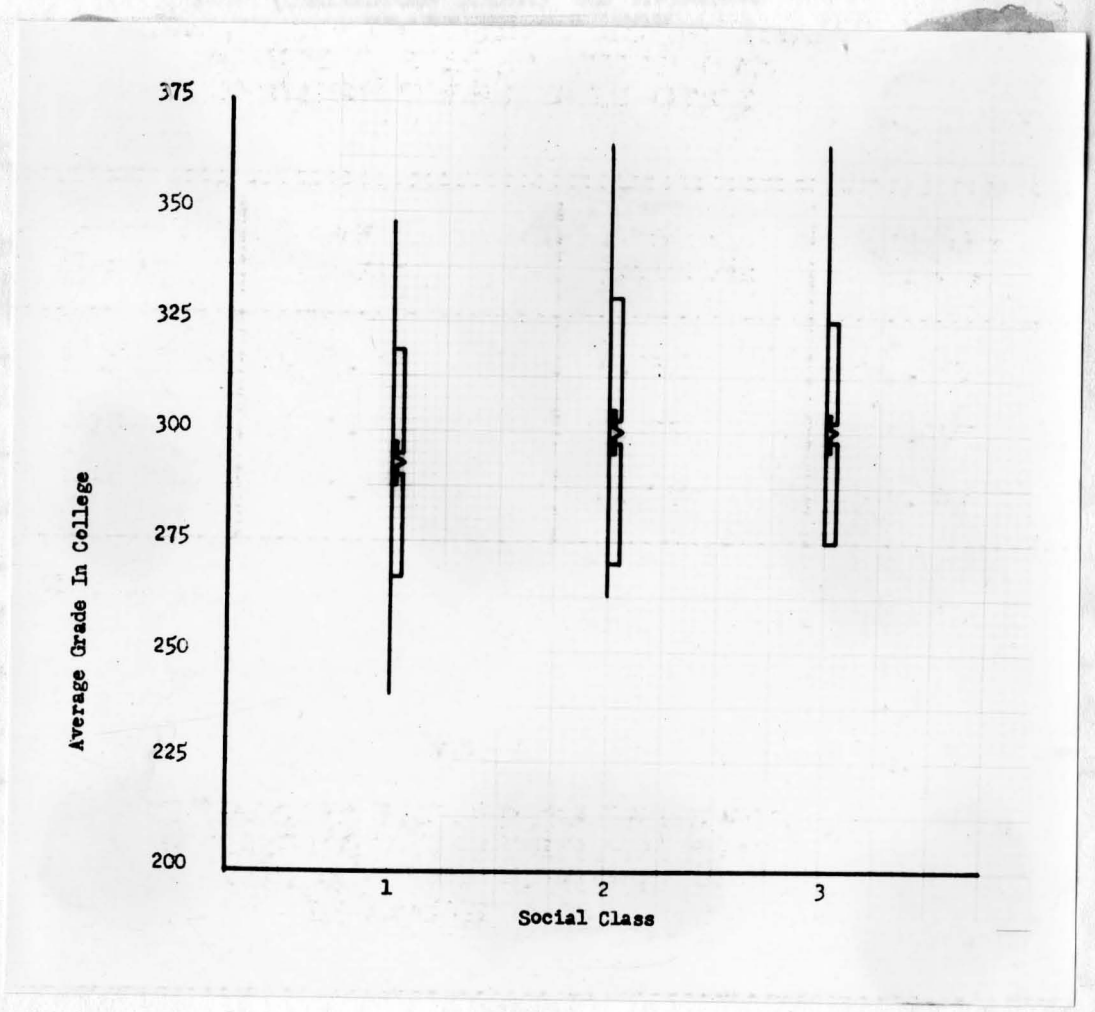

FIGURE 2

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN'S AVERAGE GRADE IN COLLEGE BY THREE SOCIAL CLASSES

TABLE 50

ACADEMIC ACHIEVEMENT AT MEDICAL SCHOOL (FRESHMAN YEAR) BY AVERAGE GRADE IN COLLEGE

Academic Average in (First Year)	Average Grade in College(AGC)			Total
	2.50-3.00	3.01-3.50	3.51-4.00	
Upper 1/3	12 (15.7)*	14 (10.6)	2 (1.7)	28
Middle 1/3	15 (15.2)	10 (10.2)	2 (1.6)	27
Lower 1/3	19 (15.2)	7 (10.2)	1 (1.6)	27
Total	46	31	5	82

* Expected frequency

$X2 = = 86.29 - 82 = 4.09$

$p > .05$

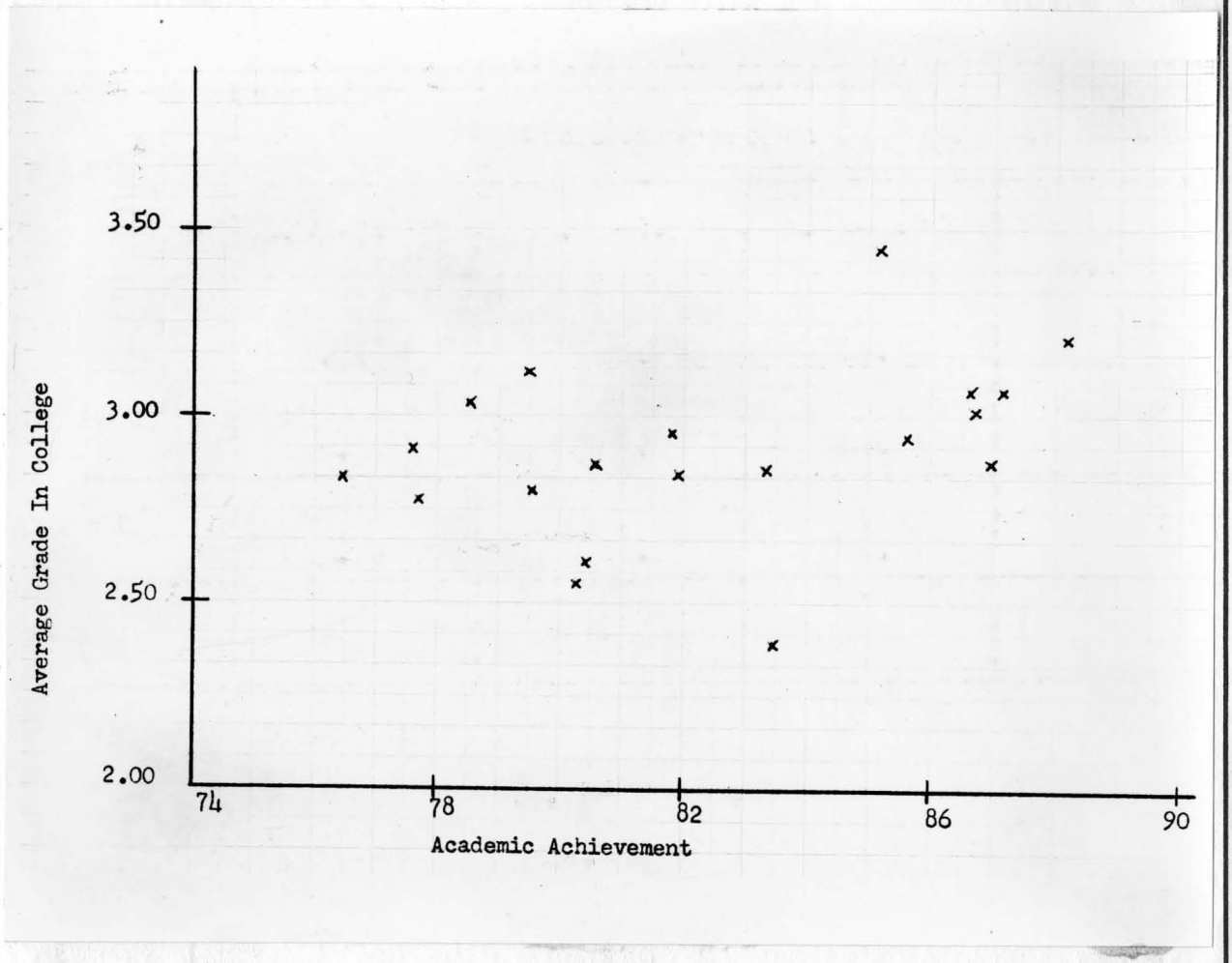

FIGURE 3

RELATIONSHIP OF ACADEMIC ACHIEVEMENT AND AVERAGE GRADE IN COLLEGE IN SOCIAL CLASS I

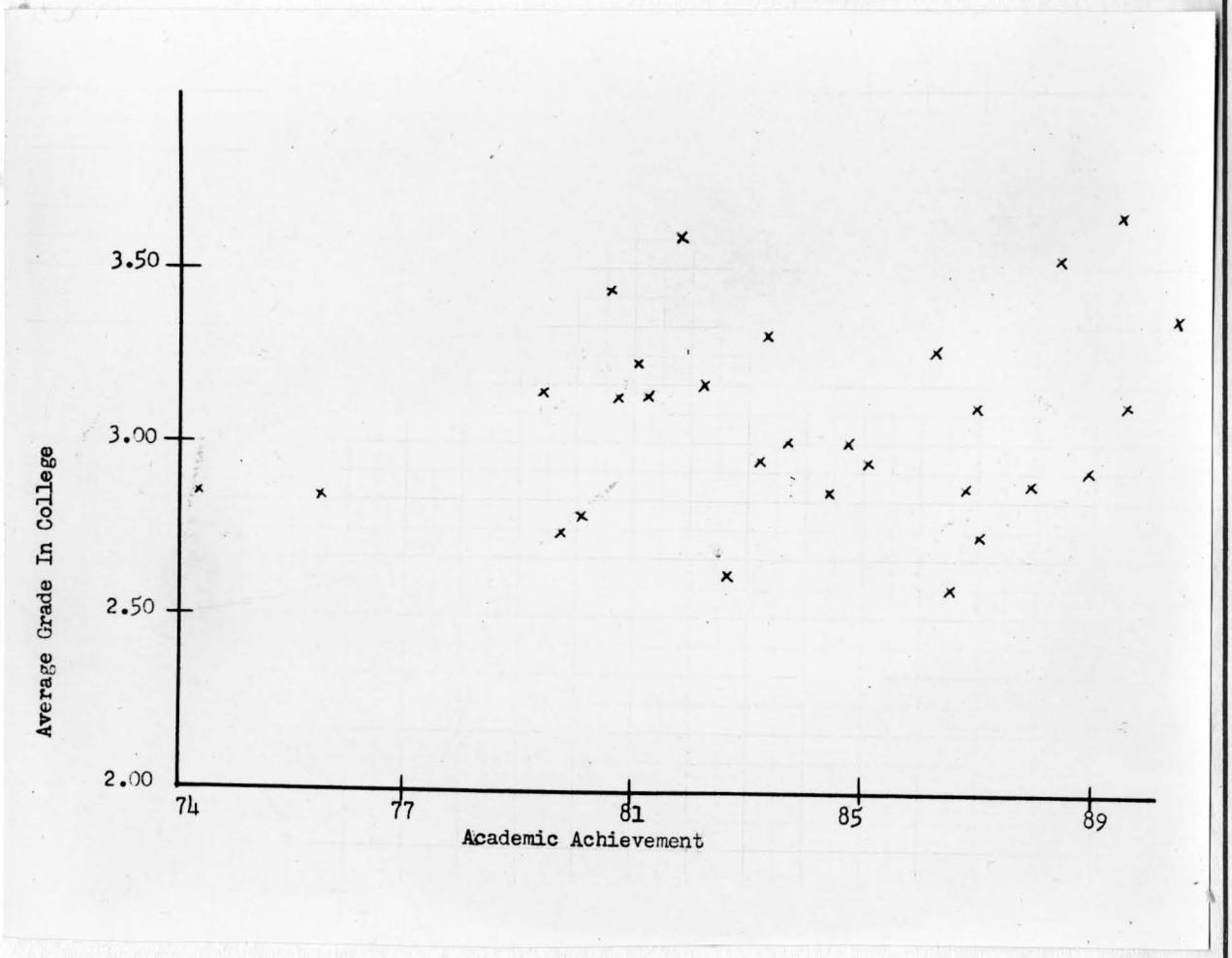

FIGURE 4

RELATIONSHIP OF ACADEMIC ACHIEVEMENT AND AVERAGE GRADE IN COLLEGE IN SOCIAL CLASS II

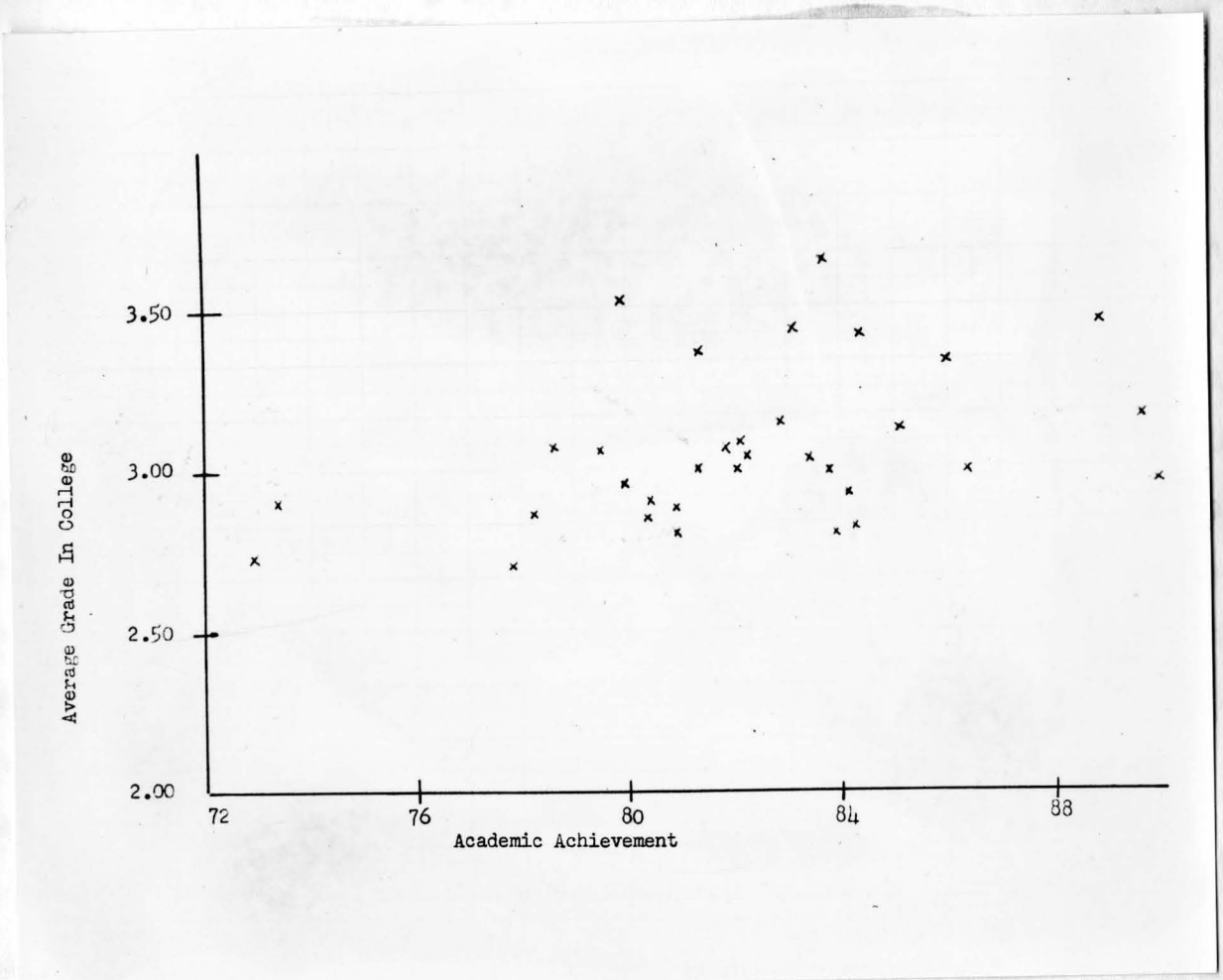

FIGURE 5

RELATIONSHIP OF ACADEMIC ACHIEVEMENT AND AVERAGE GRADE IN COLLEGE IN SOCIAL CLASS III

Social Class (SC) and the Medical College Admissions Test (MCAT).--During recent years there have been several interesting articles on the MCAT forecasting performance in medical school and for completion of training. These include the work of Gough, Hall and Harris,[5] who investigated the validity and predictive qualities of this test. Sanazaro and Hutchins[6] concerned themselves with attempting to show that the MCAT is adequately fulfilling its intended function, namely, "to provide highly dependable measures of the advanced student's general ability and his achievement in a specialized field of study."[7] Vaughn asserted that "this series of tests is predicated on the assumption that an important aspect of potentiality for a specialized field of study at the graduate and preprofessional level may be measured by testing the student's general scholastic ability and his achievement in a special field which is prerequisite to advanced study in the same or closely related field."[8]

In view of the varied opinions held in terms of the MCAT, it

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[5]H. G. Gough and W. B. Hall, "Admissions Procedures as Forecasters of Performance in Medical Training," Journal of Medical Education, 38 (1963), 983-998.

[6]Paul J. Sanazaro and Edwin B. Hutchins, "The Origin and Rationale of the Medical College Admission Test," Journal of Medical Education, 38 (1963), 1044-1050.

[7]Ibid., 1045.

[8]Ibid.

was felt that before an examination was made to explore the implications of this test as a function of class similarities in achievement, an additional refinement could be provided by the utilization of the analysis of variance to test for differences among the means of more than two samples. Thus, the analysis of variance was utilized between students of different social class backgrounds on the one hand and the four scores (S_1, S_2, S_3, S_4)[9] of the MCAT on the other. The analysis of variance will demonstrate whether or not the four tests of the MCAT in themselves are affecting the scores obtained by the students or the results are due to the students' own abilities,--in brief, whether the MCAT is simple or the student is intelligent.

The data presented in Tables 51, 52, and 53 indicate that a) irrespective of social class position, medical students' abilities do not have any significant relationship on the scores obtained by them and b) the MCAT in general does not have any significant relationship on the scores obtained by medical respondents in the sample with the exception of Class II students ($F_{3,12}=18.9$; $p < .05$).

[9] S_1: verbal ability; S_2: Quantitative ability; S_3: general information; S_4: Science

TABLE 51

ANALYSIS OF VARIANCE BETWEEN MEDICAL FRESHMEN IN SOCIAL CLASS I AND THE MEDICAL COLLEGE ADMISSION TEST-SCORES[a]

F[b] / S[c]	FRESHMEN F_1	F_2	F_3	F_4	F_5	Total
S_1	15	20	50	80	50	215
S_2	-30	---	10	*20	100	100
S_3	40	50	---	-30	40	100
S_4	140	50	20	-40	-70	100
Total	165	120	80	30	120	515(sq=65225)

VALUE OF SS.S[d]

S_1	225	400	2500	6400	2500	12025
S_2	900	---	100	400	10000	11400
S_3	1600	2500	---	900	1600	6600
S_4	19600	2500	400	1600	4900	29000
Total	n22325	5400	3000	9300	19000	59025

TABLE 51 - CONTINUED

ANALYSIS OF VARIANCE TABLE

SOURCE	SUM OF SQUARES	DEGREES OF FREEDOM	MEAN SQUARE	F-TEST
BETWEEN STUDENTS	1983.8	(r - 1) = 3	661.26	$\frac{661.26}{3434.16}$
BETWEEN TESTS	2570.05	(s -) = 4	642.51	.17
ERROR	41210.00	(r-1) s-1) = 12	3434.16	$\frac{642.51}{3434.16}$
TOTAL		19		0.18

[a]Test result x equals observation -475

[b]Students

[c]Tests (Verbal, Quantitative, General Information, Science)

[d]Sum of Squares

Between Students:
From Tables : $F_{3,12} = 3.49$
Actual : $F_{3,12} = 0.17$
$p > .05$

Between Tests:
From Tables: $F_{4}.12 = 3.26$

TABLE 52

ANALYSIS OF VARIANCE BETWEEN MEDICAL FRESHMEN IN SOCIAL CLASS II AND THE MEDICAL COLLEGE ADMISSION TEST-SCORES[a]

F[b] / S[c]	FRESHMEN F_1	F_2	F_3	F_4	F_5	Total
S_1	---	120	-10	50	160	320
S_2	-30	170	-30	90	30	230
S_3	-60	50	-60	100	140	170
S_4	-20	80	-30	80	100	210
Total	-110	420	-130	320	430	930

VALUE OF SS.S[d]

S_1	---	14,400	100	2500	25,600	42,600
S_2	900	28,900	900	8100	900	39,700
S_3	3600	2,500	3600	10,000	19,600	39,300
S_4	400	6,400	900	6400	10,000	24,100
Total	4900	52,200	5500	27,000	56,000	145,700

TABLE 52 - CONTINUED

ANALYSIS OF VARIANCE TABLE

SOURCE	SUM OF SQUARES	DEGREES OF FREEDOM	MEAN SQUARE	F-TEST
BETWEEN STUDENTS	2415	(r-1)= 3	805	$\frac{805}{10055}=0.08$
BETWEEN TESTS	79930	(S-1) = 4	19982.5	$\frac{.19982}{10055}=18.9$
ERROR	20110	(r-1(S-1) = 12	10055	
TOTAL		19		

[a]Test results x equals observation -475

[b]Students

[c]Tests (Verbal, Quantitative, General Information, Science)

[d]Sum of squares

Between Students:
From Tables: $F_{3,12} = 3.49$
Actual: $F_{3,12} = 0.88$
$p > .05$

Between Tests:
From Tables; $F_{4,12} = 3.26$
Actual: $F_{4,12} = 18.9$
$p > .05$

TABLE 53

ANALYSIS OF VARIANCE BETWEEN MEDICAL FRESHMEN IN SOCIAL CLASS III AND THE MEDICAL COLLEGE ADMISSION TEST-SCORES[a]

F[b] / SC	FRESHMEN F1	F2	F3	F4	F5	Total
S_1	-15	5	85	85	75	265
S_2	-85	45	35	65	15	245
S_3	-15	35	35	35	65	185
S_4	-45	-5	55	-5	25	115
Total	160	80	210	180	180	810

VALUE OF SS.s[d]

S_1	225	25	7225	7225	5625	20,325
S_2	7225	2025	1225	4225	225	14,925
S_3	225	1225	1225	1225	4225	8125
S_4	2025	25	3025	25	625	5725
Total	9700	3300	12,700	12,700	10,700	49,100

TABLE 53 - CONTINUED

ANALYSIS OF VARIANCE TABLE

SOURCE	SUM OF SQUARES	DEGREES OF FREEDOM	MEAN SQUARE	F-TEST
BETWEEN STUDENTS	2739	(r-1)= 3	913	$\frac{913}{928.3}=0.84$
BETWEEN TESTS	2420	(S-1)= 4	605	
ERROR	11140	(r-1)(S-1)=12	928.3	$\frac{605}{928.3}=0.66$
TOTAL		19		

[a]Test results x equals observation -475

[b]Students

[c]Tests (Verbal Quantitative, General Information, Science)

[d]Sum of Squares

Between Students:
From Tables: $F_{3,12} = 3.49$
Actual: $F_{3,12} = 0.84$
$p > .05$

Between Tests:
From Tables: $F_{4,12} = 3.26$
Actual: $F_{4,12} = 0.66$
$p > .05$

A further investigation was made on each test score of the MCAT by social class position (Tables 54, 55, and 56) and the national average score obtained on S_1, S_2, S_3, and S_4. Additionally, a percentage distribution of scores on S_1, S_2, S_3, and S_4 was made in terms of the national score intervals (Table 57).

The data presented in Tables 54, 55, and 56 indicate that 12 of 20 (60.0 per cent) of students in Class I and 21 of 33 (63.6)per cent) of the medical respondents in Class III scored above the national average in "verbal ability" in contrast to Class II students of whom 15 of 29 (51.7 per cent) scored above the national average score. In the test of "quantitative ability" 9 of 20 (45.0 per cent) of the medical respondents in Class I and 12 of 29 (41.4 per cent) in ClassII were above the national average score. For "general information," the students, irrespective of social class background, scored below the national average. The reverse results are obtained in terms of "science," in this instance, the students, irrespective of social class position, scored <u>above</u> the national average.

TABLE 54

COMPARISON OF FOUR TEST SCORES ON THE MCAT WITH THE NATIONAL AVERAGE FOR MEDICAL FRESHMEN IN SAMPLE BY SOCIAL CLASS I

N = 20	N = 20	N = 20	N = 20
National Average = 515	National Average = 506	National Average = 517	National Average = 509
S_1 (Verbal)	S_2 (Quantitative)	S_3 (General Information)	S_4 (Science)
485	445	515	615
485	505	525	625
405	465	485	505
495	475	525	525
515	565	515	415
555	525	515	495
525	485	475	495
595	395	595	525
535	545	655	545
595	555	595	565
415	445	405	525
475	575	425	415
595	525	555	625
555	495	445	435
515	485	475	525

TABLE 54 - Continued

N = 20	N = 20	N = 20	N = 20
National Average = 515	National Average = 506	National Average = 517	National Average = 509
S_1 (Verbal)	S_2 (Quantitative)	S_3 (General Information)	S_4 (Science)
425	545	515	515
525	575	515	405
545	565	475	525
535	625	445	445
415	485	385	425

TABLE 55

COMPARISON OF FOUR TEST SCORES ON THE MCAT WITH THE NATIONAL AVERAGE FOR MEDICAL FRESHMEN IN SAMPLE BY SOCIAL CLASS II

N = 29	N = 29	N = 29	N = 29
National Average = 515	National Average = 506	National Average = 517	National Average = 509
S_1 (Verbal)	S_2 (Quantitative)	S_3 (General Information)	S_4 (Science)
475	445	415	455
485	525	425	585
435	445	505	475
475	445	465	575
515	495	495	495
455	485	385	435
595	645	525	555
595	495	455	525
465	445	415	445
525	655	475	595
525	565	575	555
445	445	475	455
475	495	445	365
455	545	455	535
515	585	565	625

TABLE 55 - Continued

N = 29	N = 29	N = 29	N = 29
National Average = 515	National Average = 506	National Average = 517	National Average = 509
S_1 (Verbal)	S_2 (Quantitative)	S_3 (General Information)	S_4 (Science)
635	505	615	575
495	605	425	435
616	575	585	525
455	455	475	425
495	505	515	595
495	415	575	395
565	545	425	595
555	515	455	615
615	375	405	405
545	605	505	595
555	475	395	525
395	465	425	535
455	415	425	475
525	545	455	565

TABLE 56

COMPARISON OF FOUR TEST SCORES ON THE MCAT WITH THE NATIONAL AVERAGE FOR MEDICAL FRESHMEN IN SAMPLE BY SOCIAL CLASS III

N = 33	N = 33	N = 33	N = 33
National Average = 515	National Average = 506	National Average = 517	National Average = 509
S_1 (Verbal)	S_2 (Quantitative)	S_3 (General Information)	S_4 (Science)
515	585	515	545
535	575	505	525
505	545	535	495
435	585	455	585
565	515	475	445
555	435	425	555
585	535	535	545
585	565	535	485
535	325	425	515
565	515	535	575
535	555	535	565
405	445	525	425
565	455	575	425
515	485	485	425
655	555	635	605

TABLE 56 - Continued

N = 33	N = 33	N = 33	N = 33
National Average = 515	National Average = 506	National Average = 517	National Average = 509
S_1 (Verbal)	S_2 (Quantitative)	S_3 (General Information)	S_4 (Science)
495	565	405	505
615	485	475	565
455	535	425	485
575	515	465	525
485	445	495	455
435	435	555	515
525	585	395	495
555	445	485	495
485	555	545	545
625	405	625	565
515	275	435	475
465	505	405	505
425	485	485	505
595	615	565	495
675	655	635	685
415	485	355	435
565	535	515	565
475	635	515	615

TABLE 57

PERCENTAGES OF MEDICAL FRESHMEN WHOSE MCAT SCORES[a] FALL WITHIN THE INDICATED NATIONAL SCORE INTERVALS

Test	200-299		300-399		400-499		500-599		600-699		700-799		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Verbal	-	-	1	1.22	33	40.24	41	50.02	7	8.52	-	-	82	99.9
Quantitative	1	1.22	3	3.66	34	41.46	36	43.90	8	9.76	-	-	82	99.9
General Information	-	-	5	6.10	40	48.80	32	39.00	5	6.10	-	-	82	100.0
Science	-	-	2	2.44	31	37.78	41	50.02	8	9.76	-	-	82	99.9

[a]Medical College Admission Test. This test is divided into four sections, namely, 1) Verbal, 2) Quantitative, 3) General Information, 4) Science

N = 82

Tables 58, 59, and Figure 6 show the association between social class and the average scores on the MCAT. Although medical respondents in Class I have strikingly similar performance on the MCAT in relation to Class II and III students, these differences do not approach statistical significance either at the .05 or .01 levels.

While the data of Tables 58, 59 and Figure 6 do not provide evidence of a positive relationship between social class (SC) and average scores on the MCAT, these data alone do not confirm the null hypothesis that social class (SC) does not significantly influence a person's chances for high performance of the MCAT. It was necessary, therefore, to isolate each test, namely, S_1, S_2, S_3, and S_4 of the MCAT in terms of social class position of students in the sample to see whether or not social class was negatively related to the MCAT over and beyond the average scores of S_1, S_2, S_3, and S_4.

It is evident from the data presented in Tables 60 - 67 and Figures 7 -11 that social class (SC) had no relationship to "verbal ability" (S_1), "quantitative ability" (S_2), "general information" (S_3), and "science" (S_4) of the MCAT. Thus, these data suggest in part that observed class similarities in achievement is a function of the lower status medical students in the sample for this study having a similar intellectual potential for medical school. However, there is need for further analysis to explore possible relationships of the MCAT and AA (academic achievement) in medical school.

TABLE 58

MEANS, STANDARD DEVIATIONS, STANDARD ERRORS FOR MEDICAL FRESHMEN ON THE MCAT[a] OVER-ALL SCORE BY THREE SOCIAL CLASSES

Social Classes	MCAT Means	Standard Deviations	Standard Errors
I	507.7500	38.8816	8.6942
II	503.2333	48.3334	8.8244
III	514.4848	50.3954	8.7727

[a] Medical College Admissions Test

N = 82

TABLE 59

DIFFERENCE IN MEANS, "t" TEST AND LEVELS OF SIGNIFICANCE FOR MEDICAL FRESHMEN ON THE MCAT[a] BY THREE SOCIAL CLASSES

Social Classes	Difference in Means	t	Significance
I and II	12.9416	0.3490	NS[b]
I and III	13.1603	-0.5118	NS
II and III	12.4683	-0.9024	NS

N = 82

[a] Medical College Admissions Test

[b] No significance

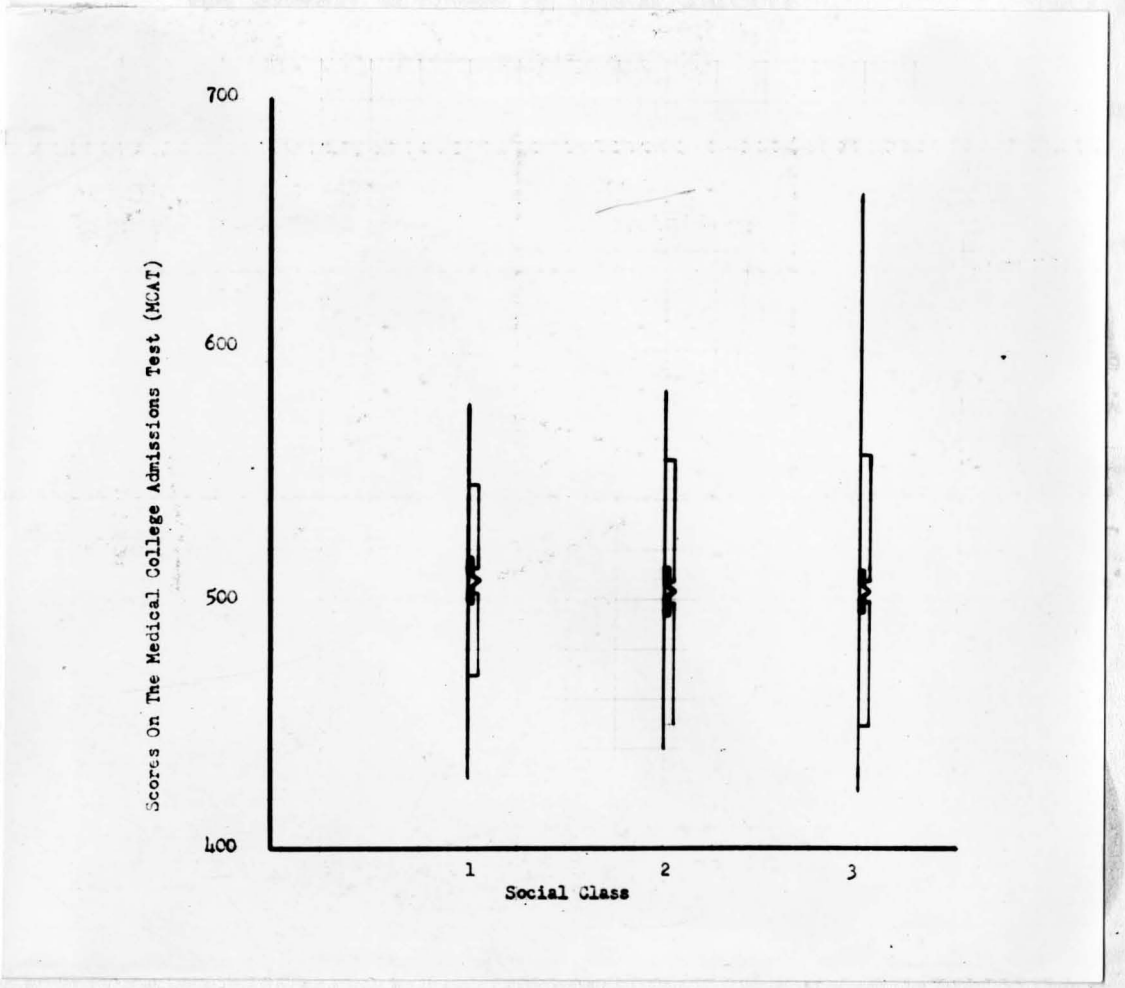

FIGURE 6

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN ON THE MEDICAL COLLEGE ADMISSIONS TEST BY THREE SOCIAL CLASSES

TABLE 60

MEANS, STANDARD DEVIATIONS, STANDARD ERRORS FOR MEDICAL FRESHMEN ON VERBAL ABILITY OF THE MCAT[a] BY THREE SOCIAL CLASSES

Social Class	Means	Standard Deviations	Standard Errors
I	509.5000	59.6899	13.3470
II	511.5517	60.7263	11.2766
III	528.3333	68.1756	11.8678

N = 82

[a]Medical College Admissions Test

TABLE 61

DIFFERENCE IN MEANS, "t" TEST AND LEVELS OF SIGNIFICANCE FOR MEDICAL FRESHMEN ON VERBAL ABILITY OF THE MCAT[a] BY THREE SOCIAL CLASSES

Social Classes	Difference in Means	t	Significance
I and II	17.5295	-0.1170	NS[b]
I and III	18.4602	-0.0202	NS
II and III	16.4950	-1.0173	NS

N = 82

[a] Medical College Admissions Test

[b] No significance

TABLE 62

MEANS, STANDARD DEVIATION, STANDARD ERRORS FOR MEDICAL FRESHMEN ON QUANTITATIVE ABILITY OF THE MCAT[a] BY THREE SOCIAL CLASSES

Social Class	Means	Standard Deviations	Standard Errors
I	511.000	54.6182	12.2130
II	507.4137	70.4402	13.0804
III	510.1515	81.7817	14.2363

N = 82

[a] Medical College Admissions Test

TABLE 63

DIFFERENCE IN MEANS, "t" TEST AND LEVELS OF SIGNIFICANCE FOR MEDICAL FRESHMEN ON QUANTITATIVE ABILITY OF THE MCAT[a] BY THREE SOCIAL CLASSES

Social Class	Difference in Means	t	Significance
I and II	18.7513	0.1912	NS[b]
I and III	20.6456	0.0410	NS
II and III	19.5220	-0.1402	NS

N = 82

[a] Medical College Admissions Test

[b] No significance

TABLE 64

MEANS, STANDARD DEVIATIONS, STANDARD ERRORS FOR MEDICAL FRESHMEN ON GENERAL INFORMATION OF THE MCAT[a] BY THREE SOCIAL CLASSES

Social Class	Means	Standard Deviations	Standard Errors
I	502.0000	66.2610	14.8164
II	474.3103	62.0444	11.5213
III	499.2424	68.6490	11.9502

N = 82

[a]Medical College Admissions Test

TABLE 65

DIFFERENCE IN MEANS, "t" TEST AND LEVELS ON SIGNIFICANCE FOR MEDICAL FRESHMEN ON UNDERSTANDING MODERN SOCIETY OF MCAT[a] BY THREE SOCIAL CLASSES

Social Class	Difference in Means	t	Significance
I and II	18.5389	1.4935	NS[b]
I and III	19.2043	0.1435	NS
II and III	16.7098	-1.4920	NS

N = 82

[a] Medical College Admissions Test

[b] No significance

TABLE 66

MEANS, STANDARD DEVIATIONS, STANDARD ERRORS FOR MEDICAL FRESHMEN ON SCIENCE OF THE MCAT[a] BY THREE SOCIAL CLASSES

Social Class	Means	Standard Deviations	Standard Errors
I	507.5000	68.5853	15.3361
II	511.8965	72.1161	13.3916
III	519.5454	59.6391	10.3818

N = 82

[a]Medical College Admissions Test

TABLE 67

DIFFERENCE IN MEANS, "t" TEST AND LEVELS OF SIGNIFICANCE FOR MEDICAL FRESHMEN ON SCIENCE OF THE MCAT[a] BY THREE SOCIAL CLASSES

Social Classes	Difference in Means	t	Significance
I and II	20.5525	-0.2139	NS[b]
I and III	17.8869	-0.6734	NS
II and III	16.7371	-0.4570	NS

N = 82

[a] Medical College Admissions Test

[b] No Significance

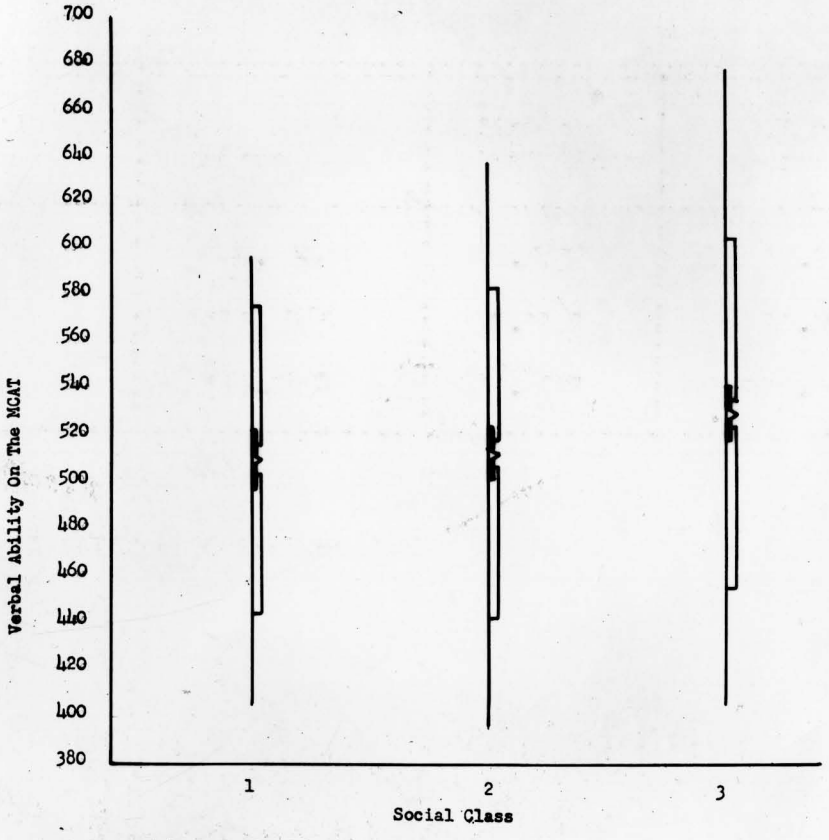

FIGURE 7

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN'S VERBAL ABILITY ON THE MCAT BY THREE SOCIAL CLASSES

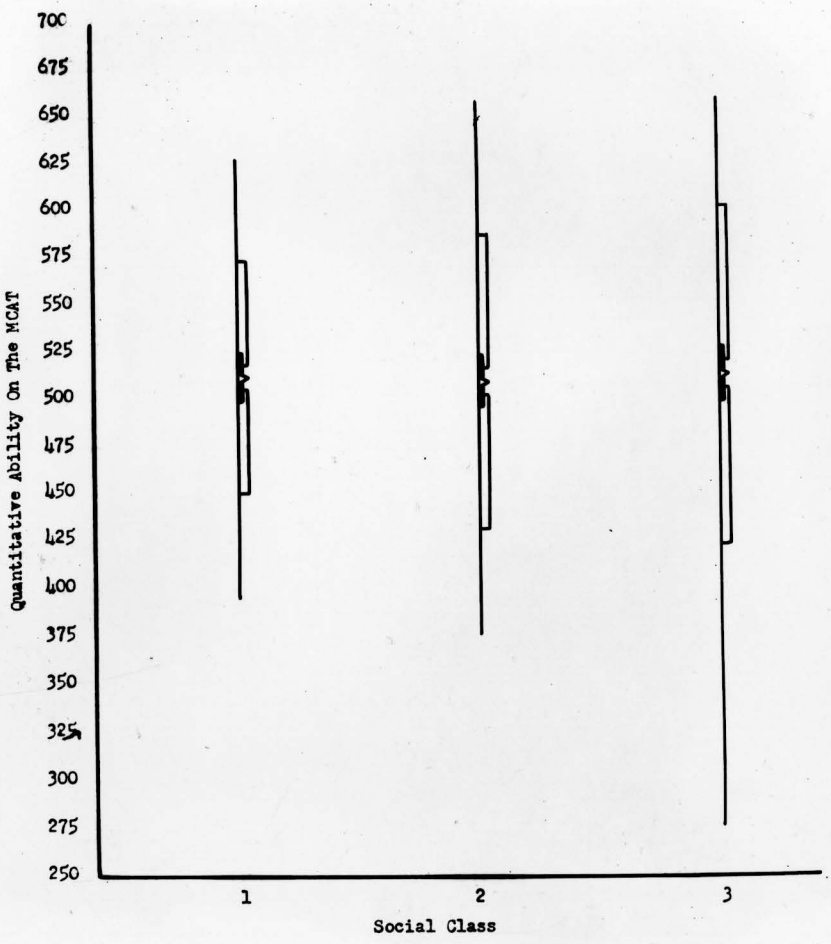

FIGURE 8

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN'S QUANTITATIVE ABILITY ON THE MCAT BY THREE SOCIAL CLASSES

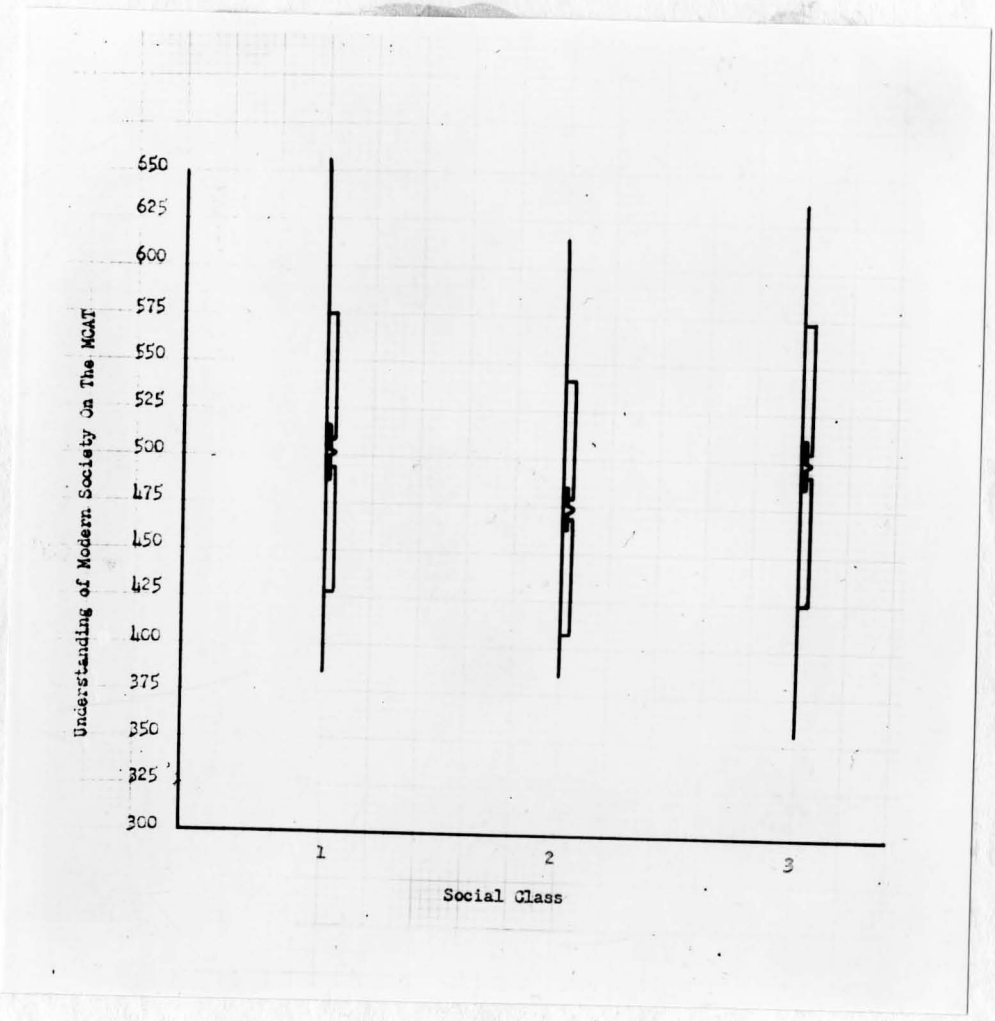

FIGURE 9

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN'S UNDERSTANDING OF MODERN SOCIETY ON THE MCAT BY THREE SOCIAL CLASSES

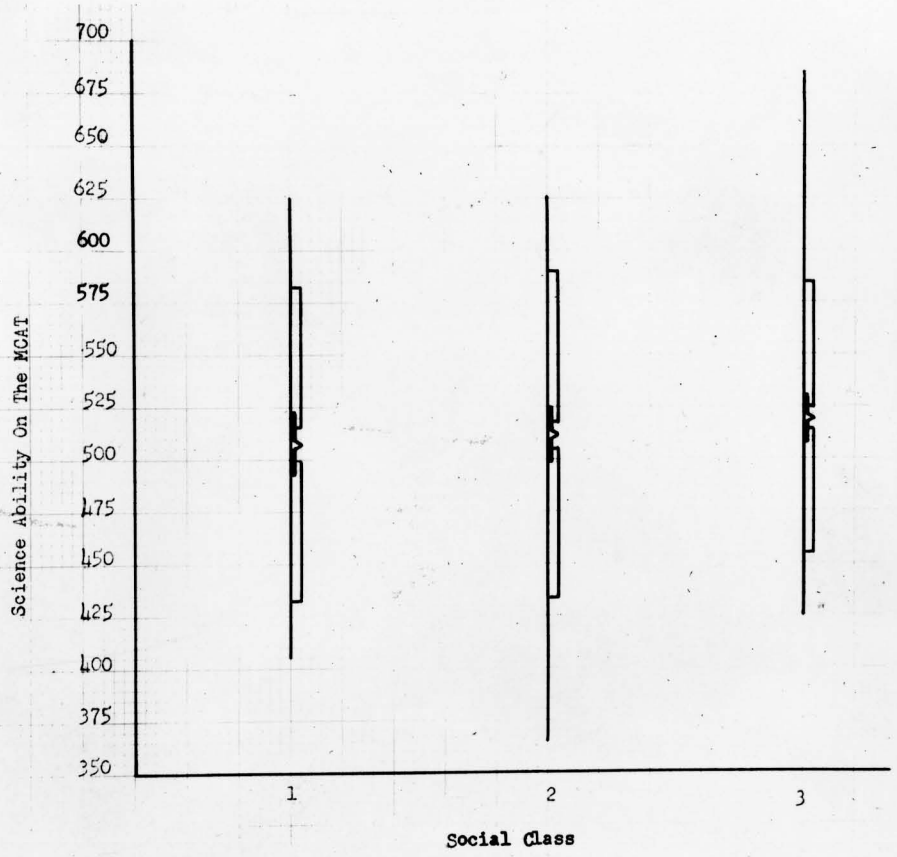

FIGURE 10

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN'S SCIENCE ABILITY ON THE MCAT BY THREE SOCIAL CLASSES

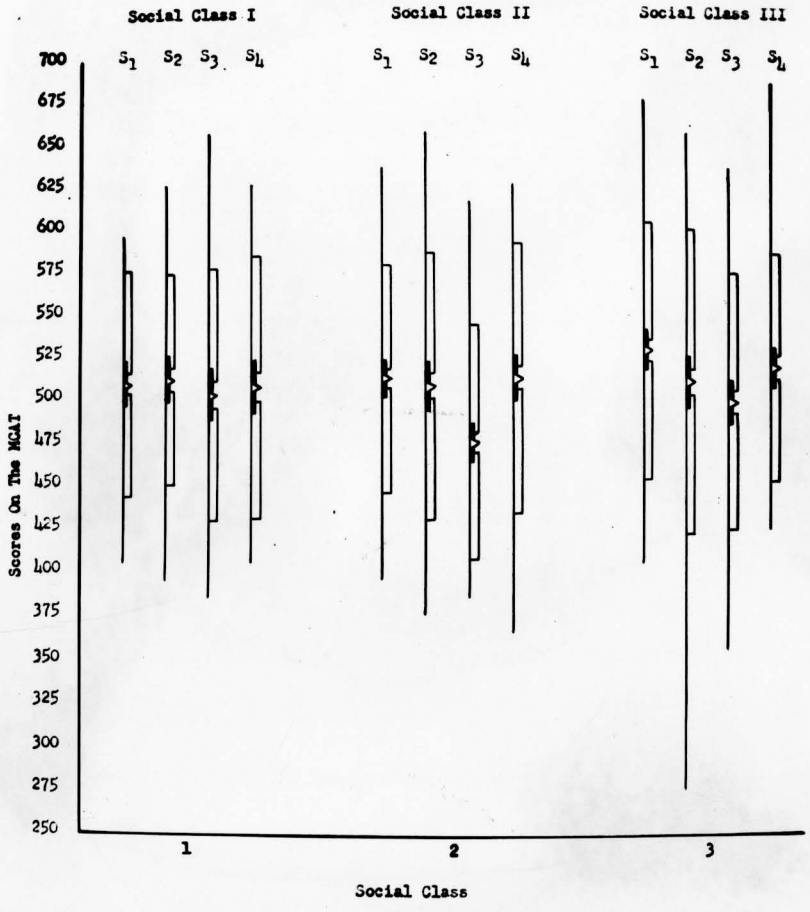

FIGURE 11

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN'S VERBAL ABILITY, QUANTITATIVE ABILITY, UNDERSTANDING OF MODERN SOCIETY, AND SCIENCE ABILITY ON THE MCAT BY THREE SOCIAL CLASSES

Medical College Admissions Test (MCAT) and Academic Achievement in First Year of Medical School (AA).--Figures 12, 13 and 14 reveal that there is no relationship between the MCAT and AA. Students with a high level of medical aptitude were often found in low levels of academic achievement irrespective of social class position. Correspondingly, students with a low level of medical aptitude were also often found in high levels of academic achievement in medical school. These data, therefore, do support in part the rejection of the hypothesis (and hence the acceptance of the null hypothesis) on the basis that observed class similarities in AA is a function of lower status medical students having similar aptitudinal potential for medical school.

To further test the relationship of the MCAT and AA, similar findings were obtained upon the utilization of the chi-square test with AA as the independent variable and the MCAT as the dependent variable (Table 68).

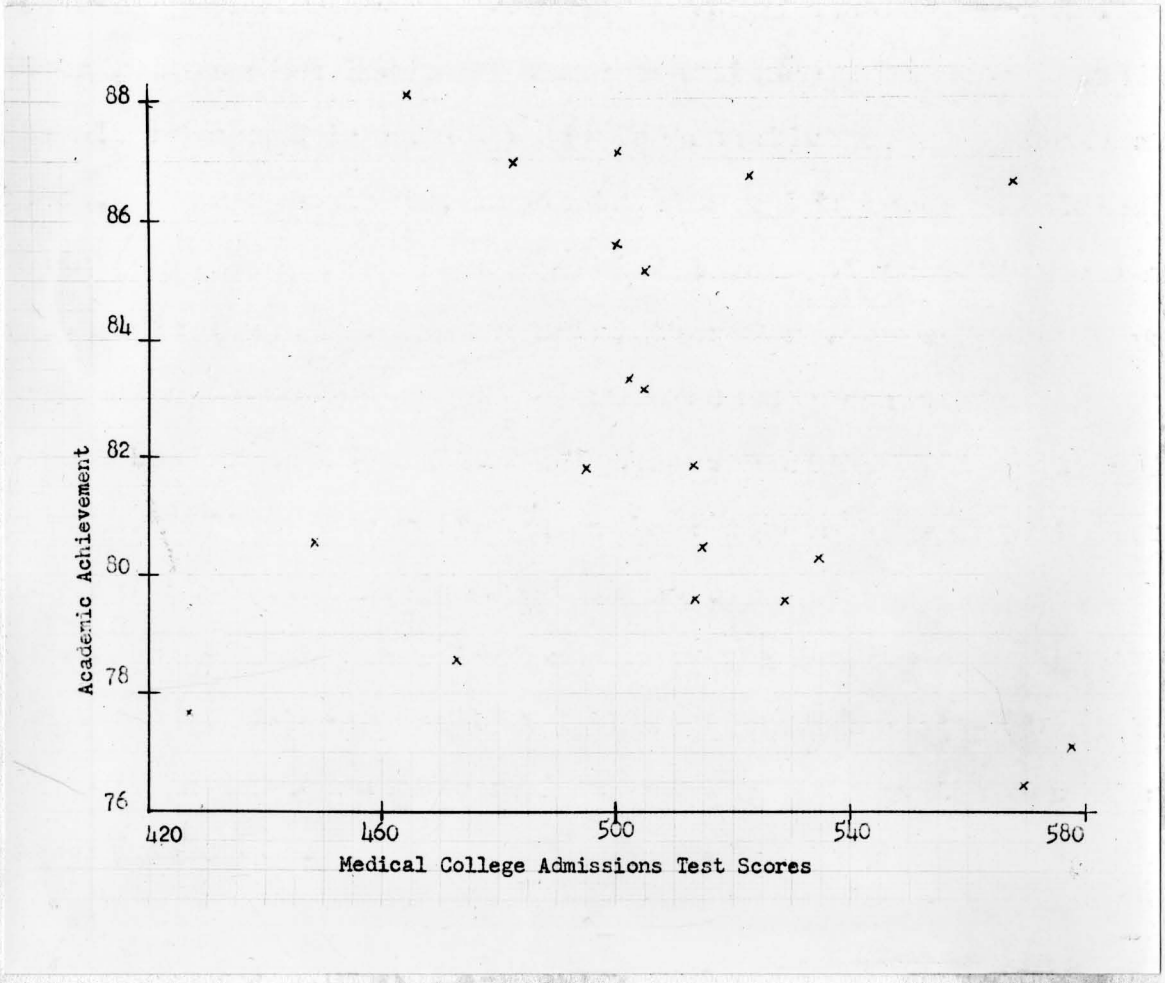

FIGURE 12

RELATIONSHIP OF ACADEMIC ACHIEVEMENT AND MEDICAL COLLEGE ADMISSIONS TEST SCORES IN SOCIAL CLASS I

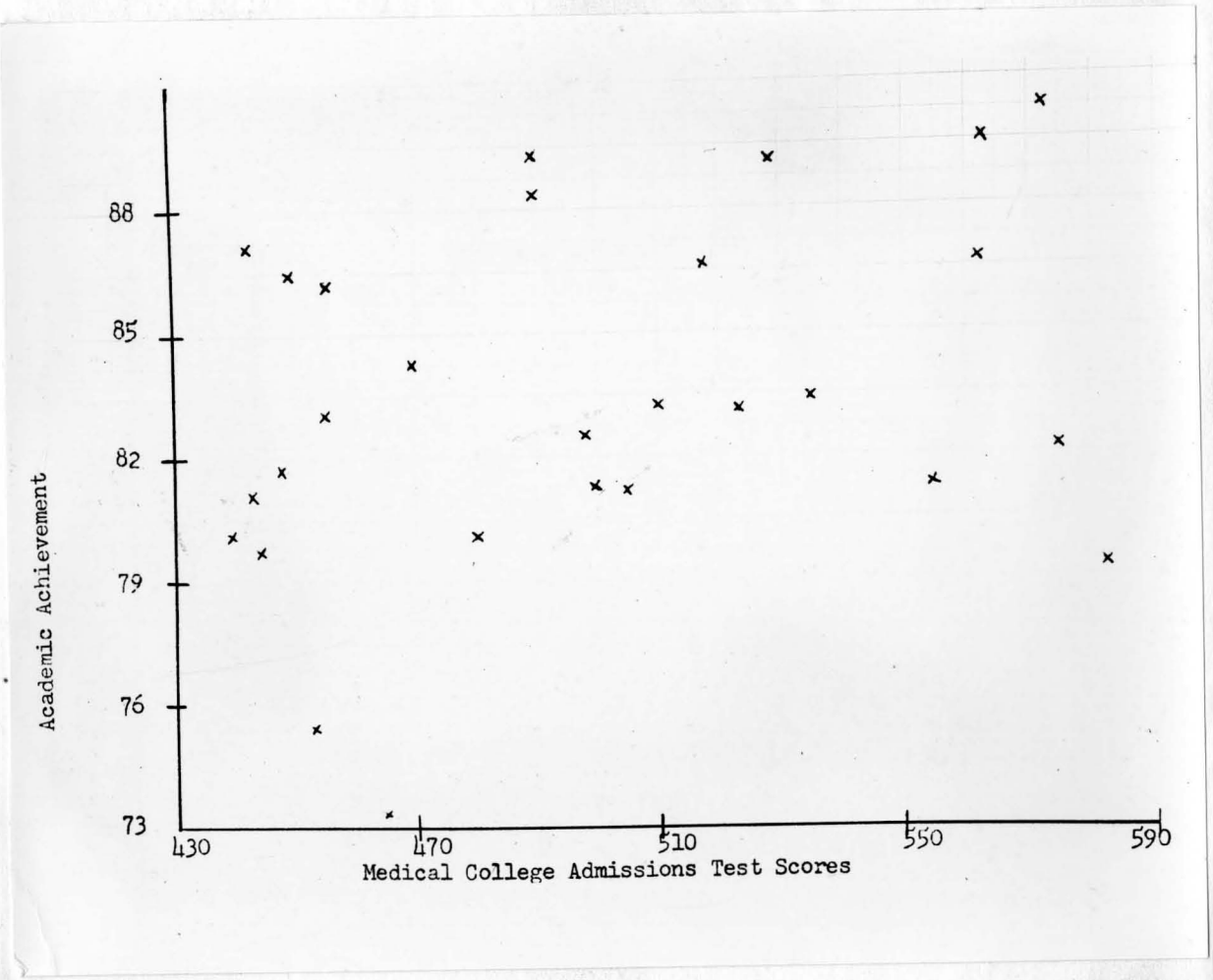

FIGURE 13

RELATIONSHIP OF ACADEMIC ACHIEVEMENT AND MEDICAL COLLEGE ADMISSIONS TEST SCORES IN SOCIAL CLASS II

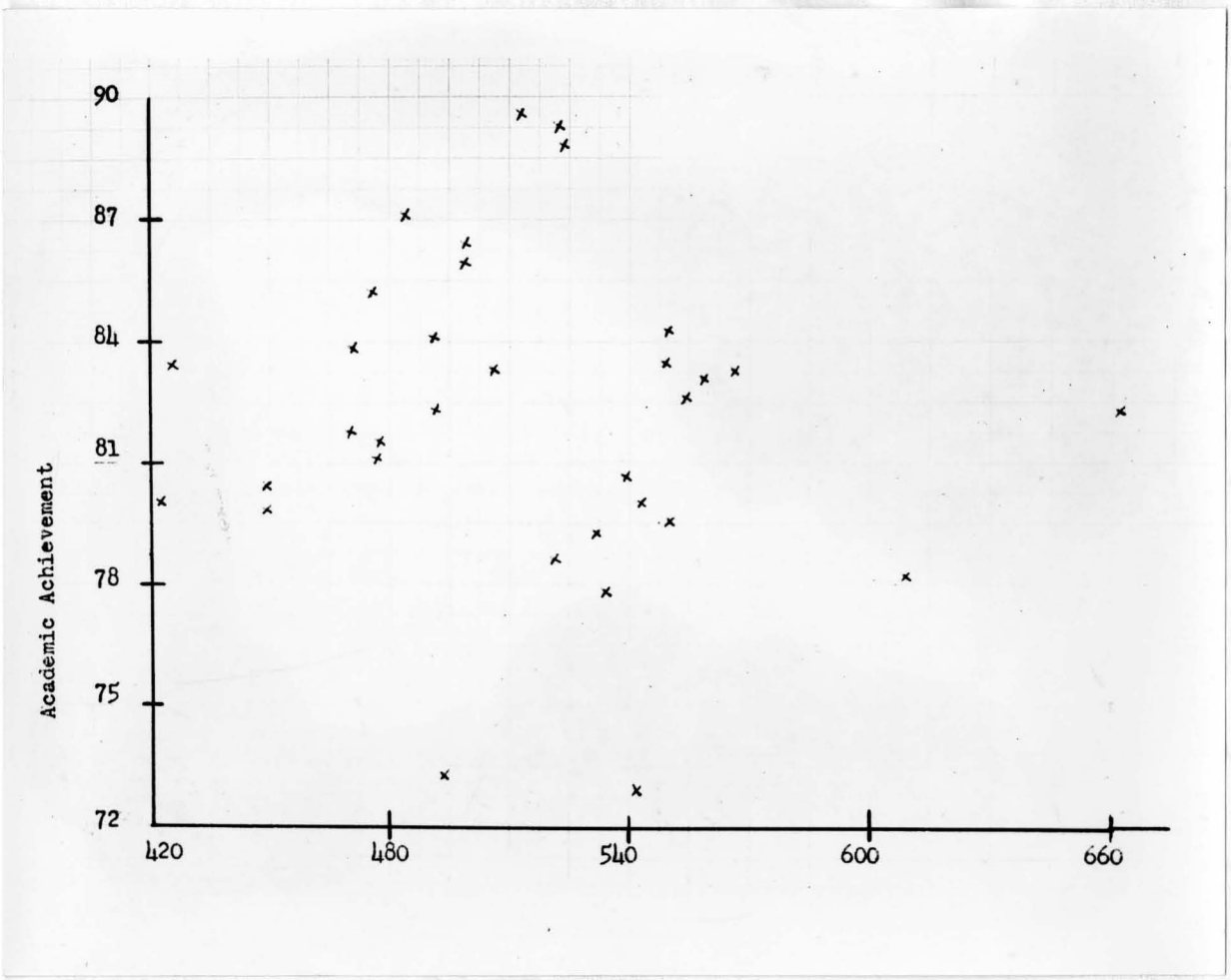

FIGURE 14

RELATIONSHIP OF ACADEMIC ACHIEVEMENT AND MEDICAL COLLEGE ADMISSIONS TEST SCORES IN SOCIAL CLASS III

TABLE 68

ACADEMIC ACHIEVEMENT (FIRST YEAR)
AT MEDICAL SCHOOL BY
MCAT SCORES

Academic Achievement	M C A T				Total
	(423 - 483)	(484 - 543)	(544 - 603)	(604 - 663)	
Upper 1/3	7 (8.5)	15 (13)	6 (5.8)	- (0.7)	28
Middle 1/3	8 (8.2)	13 (12.5)	5 (5.6)	1 (0.7)	27
Lower 1/3	10 (8.2)	10 (12.5)	6 (5.6)	1 (9.7)	27
Total	25	38	17	2	82

$x^2 = 84.40 - 82 = 2.40$

$p > .05$

Verbal Ability (S_1), Science (S_4), of the MCAT and Academic Achievement (AA).--It was thought that verbal ability (S_1) might have a significant relationship to AA in contrast to science (S_4) of the MCAT. In order to make sure that observed class similarities in AA was a function of lower status medical students having a similar intellectual potential for medical school, the verbal ability (S_1), and science (S_4) of the MCAT were isolated to see whether or not the MCAT was negatively related to AA over and beyond the average scores of S_1, S_2, S_3, and S_4.

It is evident from the data presented in Tables 69 - 73 that verbal ability (S_1) and science (S_4) of the MCAT are not related to AA, irrespective of SC. Thus, these data further suggest in part that observed class similarities in AA are a function of lower status medical students having similar intellectual potential for medical school.

TABLE 69

ACADEMIC ACHIEVEMENT (FIRST YEAR) AT MEDICAL SCHOOL BY SCORES ON VERBAL ABILITY OF THE MCAT

Academic Achievement in Medical School	VERBAL ABILITY OF THE MCAT			
	(395 - 494)	(495 - 594)	(595 - 694)	Total
Upper 1/3	8 (9.5)	15 (13.7)	5 (4.8)	28
Middle 1/3	9 (9.2)	14 (13.2)	4 (4.6)	27
Lower 1/3	11 (9.2)	11 (13.2)	5 (4.6)	27
Total	28	40	14	82

$X^2 = 81.70 - 82 = 0.30$

$p > .05$

TABLE 70

ACADEMIC ACHIEVEMENT (FIRST YEAR) AT MEDICAL SCHOOL BY SCORES ON SCIENCE OF THE MCAT

Academic Achievement in Medical School	Science of the MCAT			
	(365 - 474)	(475 - 584)	(585 - 694)	Total
Upper 1/3	5 (6.5)	17 (16.4)	6 (5.1)	28
Middle 1/3	8 (6.3)	15 (15.8)	4 (4.9)	27
Lower 1/3	6 (6.3)	16 (15.8)	5 (4.9)	27
Total	19	48	15	82

$X^2 = 83.20 - 82 = 1.20$

$p > .05$

TABLE 71

DISTRIBUTION OF SCORES OF MEDICAL FRESHMEN ON VERBAL ABILITY AND SCIENCE OF THE MCAT BY ACADEMIC RANK (UPPER ONE-THIRD) IN MEDICAL SCHOOL

Upper One-Third	Verbal Ability	Science
1	515	625
2	435	585
3	545	595
4	575	525
5	475	575
6	495	595
7	615	565
8	495	435
9	405	505
10	515	525
11	435	515
12	455	475
13	525	595
14	555	435
15	555	495
16	595	625
17	615	405
18	525	495
19	395	535

TABLE 71 - Continued

Upper One-Third	Verbal Ability	Science
20	565	445
21	425	515
22	495	525
23	595	555
24	425	505
25	535	565
26	495	395
27	555	555
28	595	525

TABLE 72

DISTRIBUTION OF SCORES OF MEDICAL FRESHMEN ON VERBAL ABILITY AND SCIENCE OF THE MCAT BY ACADEMIC RANK (MIDDLE ONE-THIRD) IN MEDICAL SCHOOL

Middle One-Third	Verbal Ability	Science
1	625	565
2	485	455
3	515	475
4	565	575
5	555	615
6	525	405
7	565	505
8	515	415
9	565	425
10	525	565
11	445	455
12	475	615
13	455	535
14	495	505
15	615	525
16	595	495
17	675	685
18	535	445
19	465	505

Table 72 - Continued

Middle One-Third	Verbal Ability	Science
20	525	495
21	475	455
22	455	485
23	515	425
24	515	495
25	485	585
26	515	545
27	405	425

TABLE 73

DISTRIBUTION OF SCORES OF MEDICAL FRESHMEN ON VERBAL ABILITY AND SCIENCE OF THE MCAT BY ACADEMIC RANK (LOWER ONE-THIRD) IN MEDICAL SCHOOL

Lower One-Third	Verbal Ability	Science
1	465	445
2	415	525
3	455	435
4	535	515
5	480	615
6	585	485
7	485	625
8	595	595
9	555	525
10	415	435
11	475	365
12	525	595
13	585	545
14	595	555
15	545	525
16	485	545
17	635	575
18	475	415
19	505	495

TABLE 73 - Continued

Lower One-Third	Verbal Ability	Science
20	655	605
21	535	525
22	415	425
23	595	565
24	535	545
25	555	495
26	435	475
27	565	565

Medical College Admissions Test (MCAT) and Average Grade in College (AGC).--In order to explore further the possibilities that observed class similarities in AA may be a function of lower status medical students having a similar intellectual and aptitudinal potential for medical school, it was necessary to investigate whether or not the MCAT and the AGC had a positive relationship. Figures 15 - 17 reveal that there is a negative relationship of scores on the MCAT and average grade in college (AGC), irrespective of social class (SC) position of medical students in the sample.

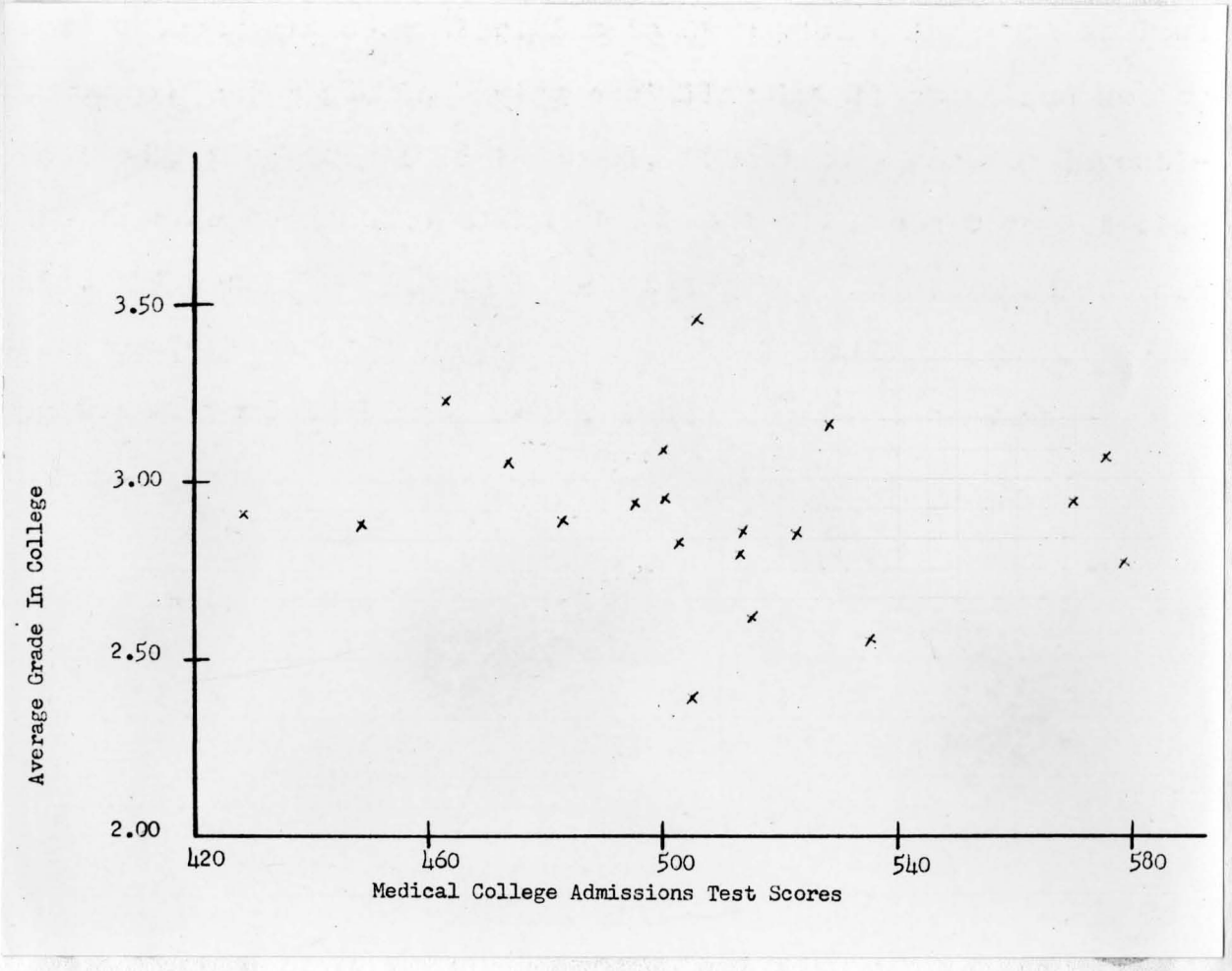

FIGURE 15

RELATIONSHIP OF AVERAGE GRADE IN COLLEGE AND MEDICAL COLLEGE ADMISSIONS TEST SCORES IN SOCIAL CLASS I

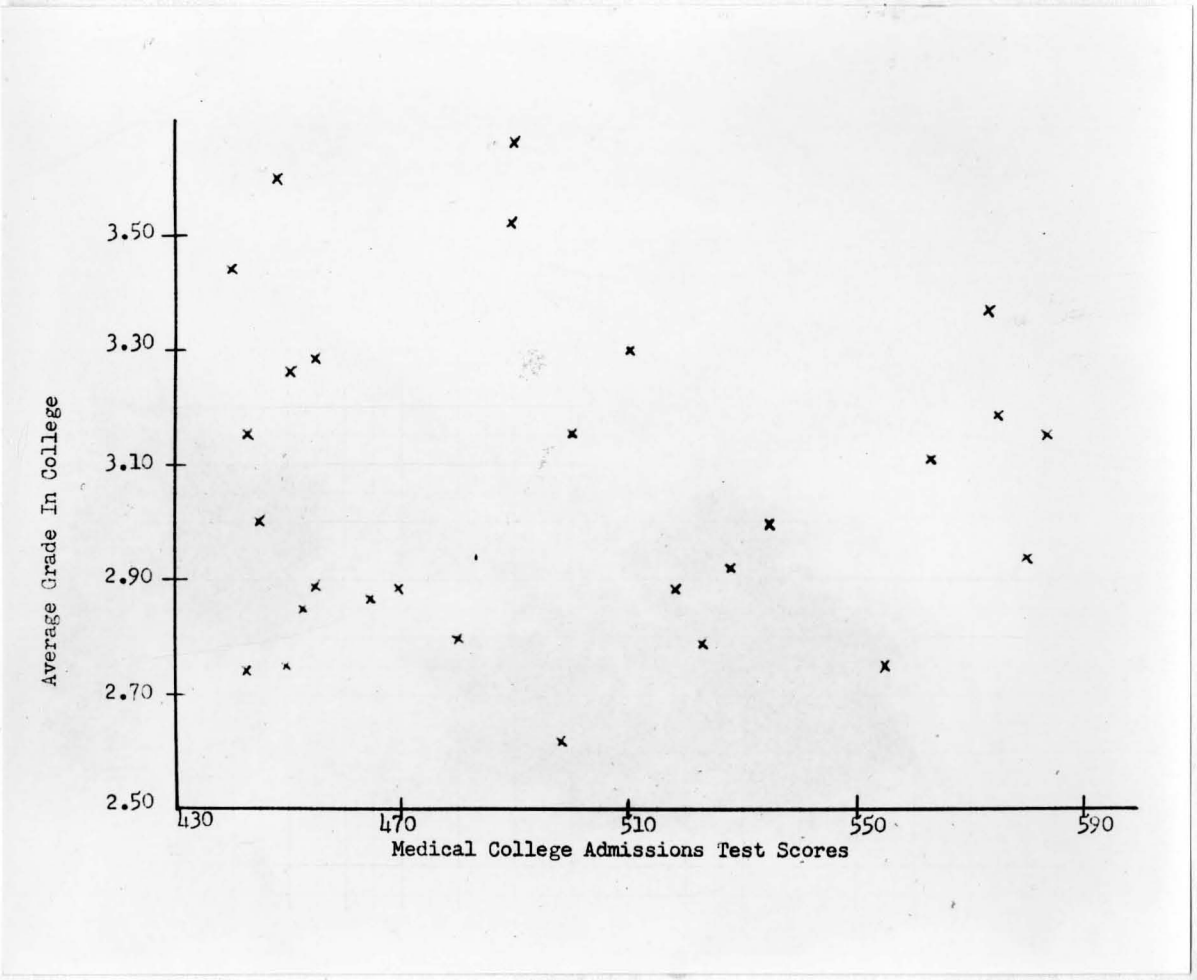

FIGURE 16

RELATIONSHIP OF AVERAGE GRADE IN COLLEGE AND MEDICAL COLLEGE ADMISSIONS TEST SCORES IN SOCIAL CLASS II

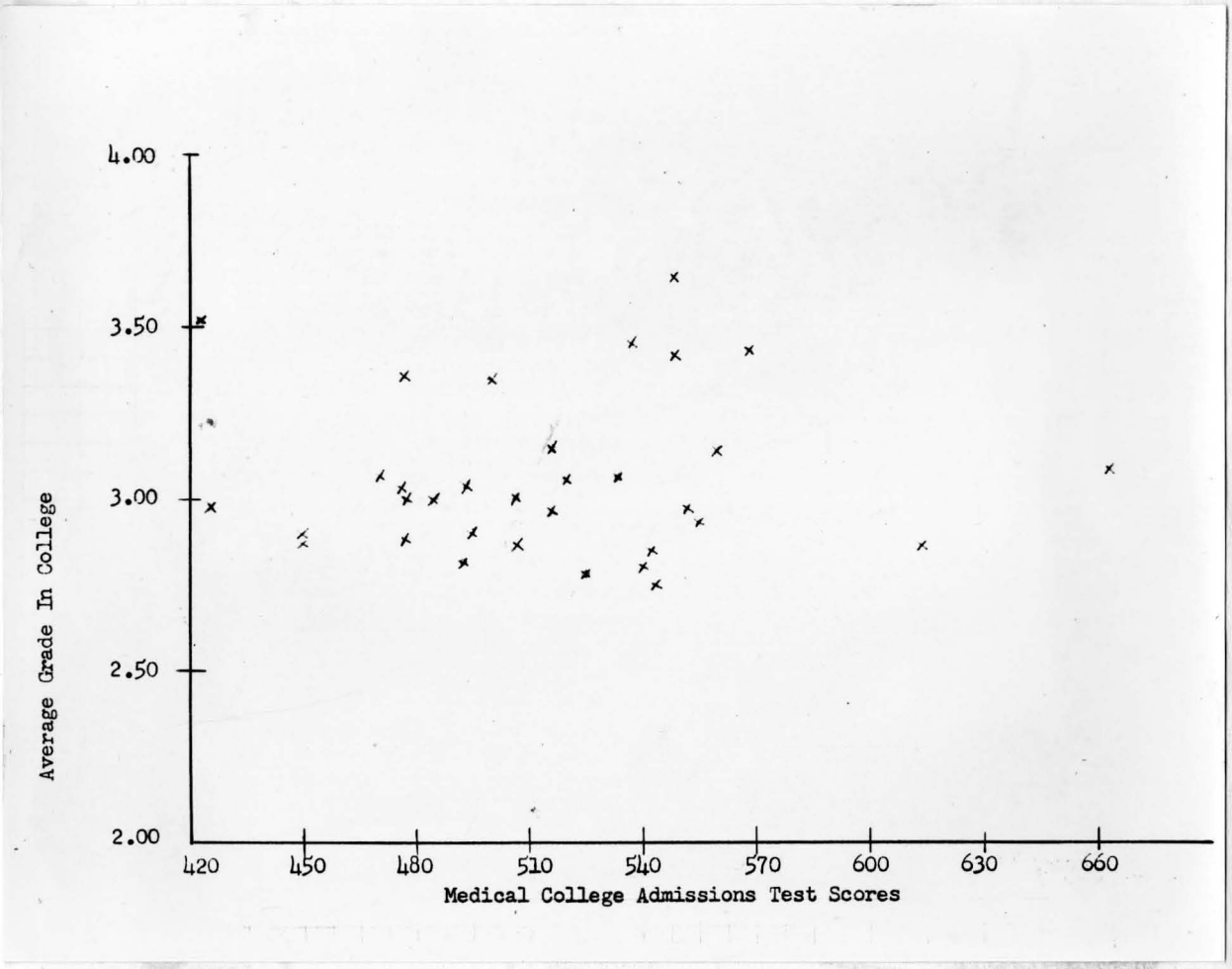

FIGURE 17

RELATIONSHIP OF AVERAGE GRADE IN COLLEGE AND MEDICAL COLLEGE ADMISSIONS TEST SCORES IN SOCIAL CLASS III

Medical College Admissions Test (MCAT), Average Grade in College (AGC), and First Year Medical School Academic Achievement (AA).--While the evidence presented in this chapter indicates no significant and important relationship of the AGC and the MCAT to AA in medical school, the findings reported in Figures 18 - 20 provide a further test of the negative relationship of social class position (SC) to medical school achievement (AA).

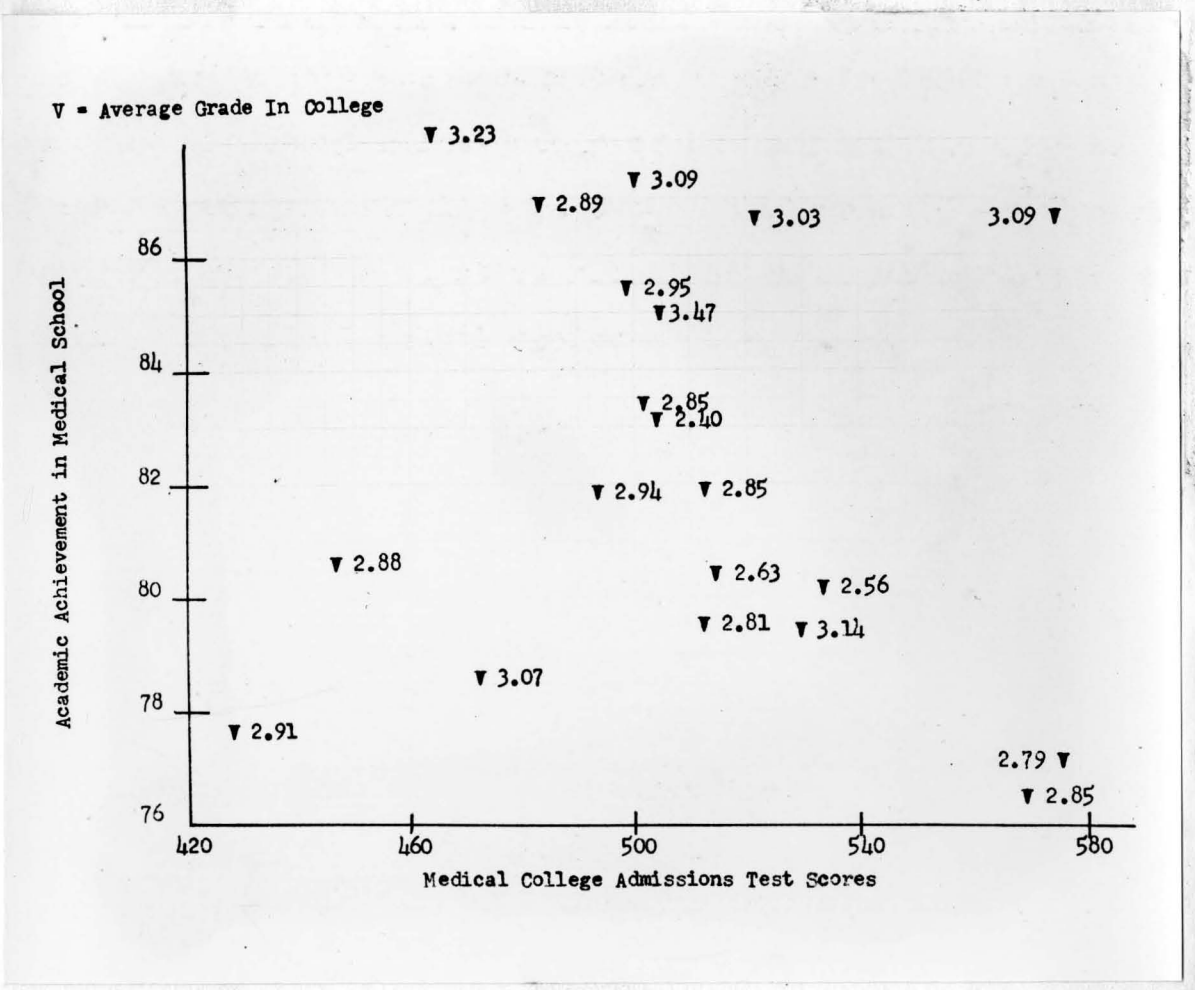

FIGURE 18

RELATIONSHIP OF AVERAGE GRADE IN COLLEGE, MEDICAL COLLEGE ADMISSIONS TEST SCORES, AND ACADEMIC ACHIEVEMENT IN MEDICAL SCHOOL IN SOCIAL CLASS I

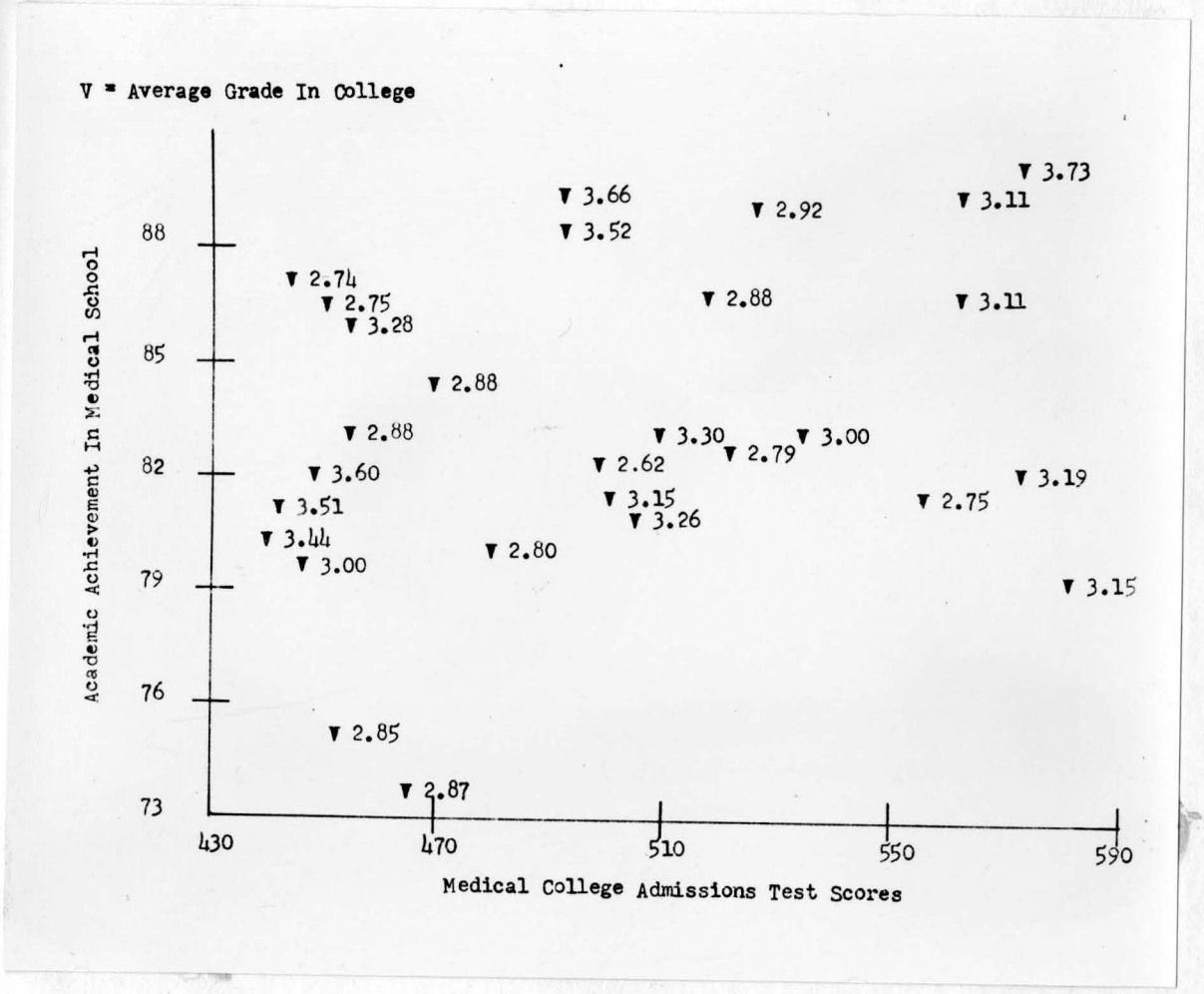

FIGURE 19

RELATIONSHIP OF AVERAGE GRADE IN COLLEGE, MEDICAL COLLEGE ADMISSIONS TEST SCORES, AND ACADEMIC ACHIEVEMENT IN MEDICAL SCHOOL IN SOCIAL CLASS II

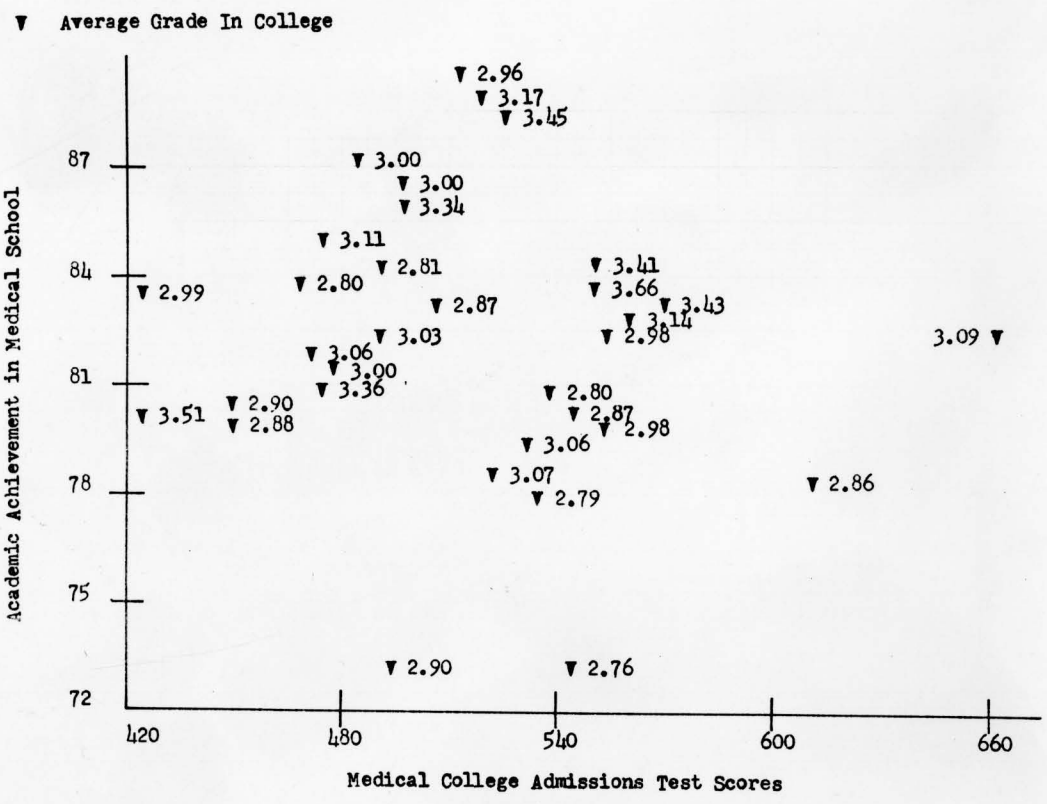

FIGURE 20

RELATIONSHIP OF AVERAGE GRADE IN COLLEGE, MEDICAL COLLEGE ADMISSIONS TEST SCORES, AND ACADEMIC ACHIEVEMENT IN MEDICAL SCHOOL IN SOCIAL CLASS III

Summary.--In summary, the findings reported in this chapter indicate:

1) Academic achievement (AA) at medical (Freshman Year) school is not significantly related to social position.
2) Class similarities in achievement at medical school are a function of lower status medical students having a similar intellectual and aptitudinal potential for medical school.
3) Average grade in college (AGC)of medical respondents in the sample is not significantly related to social class position.
4) Academic achievement (AA) at medical school is not significantly related to average grade in college (AGC).
5) A medical student's average score on the MCAT is not significantly related to social class position.
6) A medical student's score on verbal ability (S_1) of the MCAT is not significantly related to social class position.
7) Academic achievement at medical school is not significantly related to average scores on the MCAT irrespective of SC.
8) A medical student's score on quantitative ability (S_2) of the MCAT is not significantly related to social class position.

Summary (continued):--

9) A medical student's score on general information (S_3) of the MCAT is not significantly related to social class position.

10) A medical student's score on science (S_4) of the MCAT is not significantly related to social class position.

11) Academic achievement (AA) at medical school is not significantly related to a student's score on verbal ability (S_1) of the MCAT.

12) Academic achievement (AA) at medical school is not significantly related to a student's score on quantitative ability (S_2) of the MCAT.

13) There is a negative relationship between the AGC and the MCAT of medical respondents in the sample, irrespective of SC.

14) There is a negative relationship of AGC, MCAT, and AA of medical students in the sample irrespective of SC.

15) The analysis of variance indicates:

a) irrespective of social class position, medical students' abilities in the sample do not have any significant relationship to the scores obtained by them and

5) the MCAT in itself does not have any significant relationship to scores obtained by medical respondents in the sample with the exception of Class II students ($F_{4,12}=18.9$; $p>.05$)

Summary (continued):--

16) An investigation on each test score of the MCAT by social class membership and the national average score on S_1, S_2, S_3, and S_4 indicates:

a) 12 of 20 (60 per cent) students in Class I and 21 of 33 (63.6 per cent) of the medical respondents in Class III scored above the national average in verbal ability in contrast to Class II students of whom 14 of 29 (48.3 per cent) scored above the national average.

b) in terms of quantitative ability 11 of 20 (55.0 per cent) medical respondents in Class I and 12 of 29 (41.4 per cent) in Class II scored above the national average score.

c) for "general information" (S_3) students irrespective of social class position scored below the national average.

d) the reverse results are obtained in terms of science (S_4); students irrespective of social class position scored above the national average.

In essence, therefore, there appears to be little doubt that academic achievement in the first year of medical school is not related to one's social class position, to his average grade in college, or scores obtained on the Medical College Admission Test.

Summary (continued):--

It seems that higher intelligence and greater scientific knowledge propel lower class students. Scores on "general information" by Class II students are strikingly lower than others--looks like middle-class philistinism.

Since many schools are involved in a searching analysis of their educational programs, it seems incumbent upon medical school faculties to study the MCAT and the AGC of a medical applicant in greater detail.

CHAPTER V

SOCIAL CLASS (SC), ACADEMIC ACHIEVEMENT (AA), STRESS-ANXIETY RESPONSES (SA), CYNICISM-IDEALISM (CI), AND THE INTERNALIZATION OF PROFESSIONAL ATTITUDES (IPA)

This chapter reports the findings on the hypothesized associations between social class (SC) and stress-anxiety responses (SA), cynicism-idealism (CI), and the internalization of professional attitudes (IPA) of medical respondents in the sample. It investigates the empirical question, namely, whether or not AA is significantly related to SA, CI, and IPA.

Stress-Anxiety Responses (SA) by Social Class (SC).--The hypothesis that stress-anxiety[1] at medical school is significantly related to social class position is not supported by the findings reported in Tables 74 and 75 and by Figure 21.[2]

---

[1]SA is measured by Taylor's "Personality Scale of Manifest Anxiety," Journal of Abnormal Social Psychology, 48 (1953), 285-290. See Chapter II and Appendix H. The scores range from 0-50. If SA scores are reduced there is a decline in stress-anxiety; if SA scores are increased there is an increase in stress-anxiety.

[2]The heavy vertical lines indicate the range of variation in SA scores for a given SC during Periods I, II, and III. The mean is represented by a small triangle; the blackened part of each bar comprises twice the standard error of the mean on either side of the mean; one half of each black bar plus the white bar at either end outlines one standard deviation on either side of the mean.

In period II,[3] Class I students ' scores indicate a greater degree of SA than Class II and III students whose SA levels are somewhat similar.

In Period III, Class II students' scores indicate a lower degree of SA than Class I and III respondents whose SA levels are somewhat similar.

Although there are SA differences by social class during Periods I, II, and III of medical respondents in the sample, these differences do not approach statistical significance at the .05 level.

Figure 21 further indicates that Class I students experience a gradual decrease of SA over three periods; for Class II students there is no change of SA in Periods I and II but a decrease of SA in Period III; for Class III respondents there is a marked decrease of SA during Period II and III in contrast to Period I. This decrease, however, does not approach statistical significance at the .05 level.

---

[3]The Biographical Inventory was administered at three regular six-month intervals, namely, November 1962, August 1963, and in January 1964.

TABLE 74

MEANS, STANDARD DEVIATIONS, STANDARD ERRORS FOR MEDICAL FRESHMEN'S STRESS AND ANXIETY RESPONSES IN PERIODS I, II, AND III[a] BY THREE SOCIAL CLASSES

Social Class	Means for Period			Standard Deviations for Period			Standard Errors for Period		
	I	II	III	I	II	III	I	II	III
I	16.2000	15.5000	14.5500	8.8055	10.1229	9,6489	1.9690	2.2635	2.1575
II	13.9000	13.9310	12.5862	7.0922	6.5297	8.0645	1.2949	1.2125	1.4975
III	17.1515	14.0909	14.0303	8.3596	7.3670	8.3684	1.4552	1.2824	1.4567

N = 82

[a]Stress and Anxiety responses of the medical freshmen were measured by Taylor's "Personality Scale of Manifest Anxiety" (Biographical Inventory). The scores range from 0-50. If SA scores are reduced there is a decline in Stress-Anxiety, if SA scores are increased there is an increase in Stress-Anxiety. See Chapter II and Appendix H. The Biographical Inventory was administered at three six-month intervals, namely, November 21, 1962, August 1963, and in January 1964.

TABLE 75

DIFFERENCE IN MEANS, "t" TEST AND LEVELS OF SIGNIFICANCE FOR MEDICAL FRESHMEN'S STRESS AND ANXIETY RESPONSES IN PERIODS I, II AND III BY THREE SOCIAL CLASSES

Social Classes	Difference in Means Period			"t" Test for Period			Significance for Period		
	I	II	III	I	II	III	I	II	III
I and II	2.2561	2.3760	2.5402	1.0194	0.6603	0.7730	No Significance for all social classes and periods		
I and III	2.0468	2.0438	2.5127	-0.3937	0.5850	0.2068			
II and III	1.9633	1.7788	2.0942	-1.6561	-0.0809	-0.6895			

N = 82

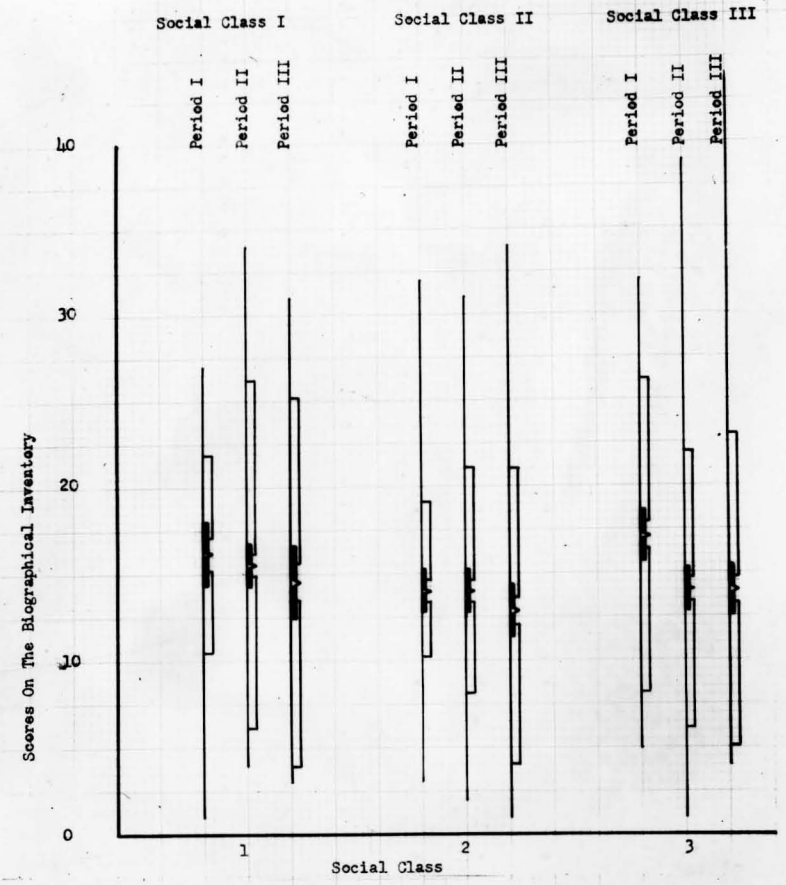

FIGURE 21

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN IN PERIODS I, II, AND III ON THE BIOGRAPHICAL INVENTORY BY SOCIAL CLASS

Stress-Anxiety Responses (SA) by Academic Achievement (AA).--
The data presented in Tables 76 - 79 indicate that a medical student's academic achievement (AA) has no relationship to his stress-anxiety responses (SA). An investigation of SA and AA in Periods I and II, II and II, I and III reveal that there is no statistical relationship between SA responses and AA of medical respondents in the sample.

TABLE. 76

ACADEMIC ACHIEVEMENT (AA)[a] AT MEDICAL SCHOOL BY STRESS-ANXIETY RESPONSES (SA)[b] FOR PERIODS I AND II[c]

Academic Achievement First Year	DIFFERENCE IN SA			
	Reduced SA (-3 and Less)	No Change SA (-2, 2)	Increased SA (3 and Above)	Total
Upper 1/3	10 (10.9)	12 (11.6)	6 (5.5)	28
Middle 1/3	12 (10.5)	9 (11.2)	6 (5.3)	27
Lower 1/3	10 (10.5)	13 (11.3)	4 (5.3)	27
Total	32	34	16	82

$X^2 = 83.55 - 82 = 1.55$

$p > .05$

[a] Academic achievement was measured by the medical student's grades at the end of the first year of medical school.

[b] Stress-anxiety responses of the medical freshmen were measured by "Taylor's Personality Scale of Manifest Anxiety" (Biographical Inventory). The scores range from 0 - 50. If SA scores are reduced there is a decline in stress-anxiety; If SA scores are increased there is a corresponding increase in stress-anxiety.

[c] The Biographical Inventory was administered at three six-month intervals, namely, November 1962, August 1963, January 1964.

TABLE 77

ACADEMIC ACHIEVEMENT (AA) AT MEDICAL SCHOOL BY STRESS-ANXIETY RESPONSES FOR PERIODS II AND III

Academic Achievement	Reduced SA (-3 And Less)	No Change SA (-2, 2)	Increased SA (3 and More)	Total
Upper 1/3	12 (8.9)	11 (12.9)	5 (6.2)	28
Middle 1/3	7 (8.6)	14 (12.5)	6 (5.9)	27
Lower 1/3	7 (8.6)	13 (12.5)	7 (5.9)	27
Total	26	38	18	82

$X^2 = 84.59 - 82 = 2.59$

$p > .05$

TABLE 78

ACADEMIC ACHIEVEMENT (AA) AT MEDICAL SCHOOL BY STRESS-ANXIETY RESPONSES (SA) FOR PERIODS II AND III

Academic Achievement	Reduced SA (3 and Less)	No Change SA (-2, 2)	Increased SA (3 and Above)	Total
Upper 1/3	14 (13.7)	11 (9.2)	3 (5.1)	28
Middle 1/3	14 (13.2)	7 (8.9)	6 (4.9)	27
Lower 1/3	12 (13.2)	9 (8.9)	6 (4.9)	27
Total	40	27	15	82

$X^2 = 84.17 - 82 = 2.17$

$p > .05$

TABLE 79

CHANGE IN STRESS-ANXIETY (SA) FOR PERIODS I AND II; II AND III; I AND III BY ACADEMIC ACHIEVEMENT (AA) AT MEDICAL SCHOOL

Upper 1/3 AA			Middle 1/3 AA			Lower 1/3 AA		
Periods I and II	Periods II and III	Periods I and III	Periods I and II	Periods II and III	Periods I and III	Periods I and II	Periods II and III	Periods I and III
-1	-2	-3	6	5	11	1	5	6
-4	-6	-10	-12	-1	-13	-1	-10	-11
-1	3	2	-2	-5	-7	-3	-1	-4
-5	0	-5	-18	-1	-19	-7	2	-5
-7	7	0	-3	6	3	-10	-6	-16
-1	2	1	5	-3	2	2	-3	-1
-3	1	-2	1	-4	-3	1	-2	-1
3	-7	-4	4	0	4	-11	-2	-13
-1	-3	-4	-13	-1	-14	-2	3	1
1	-7	-6	-1	3	-4	-2	3	1
-3	0	-3	-1	1	0	-1	-3	-4
1	-7	-6	-1	1	0	-7	-1	-8
-1	-5	-6	-2	4	2	-5	5	0
-5	1	-4	-4	5	1	6	1	7
-9	5	-4	3	-2	1	0	7	7
5	-4	1	-5	2	-3	2	-1	1

TABLE 79 - CONTINUED

Upper 1/3 AA			Middle 1/3 AA			Lower 1/3 AA		
Periods I and II	Periods II and III	Periods I and II	Periods I and II	Periods II and III	Periods I and III	Periods I and II	Periods II and III	Periods I and II
7	-2	5	-11	6	-5	-1	2	1
19	-14	5	-3	-3	-6	-1	5	4
-1	-1	-2	-3	0	-3	-4	1	-3
-8	-5	-13	11	-5	4	5	-5	0
2	-3	-1	-2	-2	-4	-2	-5	-7
-2	-1	-3	-6	1	-5	-6	-1	-7
-3	3	0	-1	-2	-3	-6	2	-4
5	-5	0	-8	-5	-13	2	2	4
-5	-1	-6	-3	1	-2	-3	-1	-4
0	-2	-2	4	-1	3	3	-4	-4
4	-3	1	2	3	5	3	3	6
2	3	5						

Cynicism-Idealism (CI) by Social Class (SC).--The hypothesis that cynicism-idealism[4] (CI) at medical school is significantly related to social class position (SC) is not supported by the data of Tables 80 - 81 and by Figure 22.[5]

In Period I (Figure 22) medical students in Class I and II scored higher CI levels than Class III students. Although CI differences of Class III respondents are less than either Class I or II these differences do not approach statistical significance at the .05 level.

In Period II, Social Class I students exemplify higher CI level in contrast to Class II and III respondents, whose CI levels are somewhat similar.

In Period III, the middle class students show higher CI levels in contrast to Class I and III respondents whose CI levels appear to be approximately the same.

Although there are CI differences by social class during Periods I, II, and III of medical respondents in the sample, these differences do not approach statistical significance at the .05 level.

---

[4]See Chapter II and Appendix I

[5]The heavy vertical lines indicate the range of variation in CI scores for a given SC during Periods I, II, and III. The mean is represented by a small triangle; the blackened part of each bar comprises twice the standard error of the mean on either side of the mean; one half of each black bar plus the white bar at either end outlines one standard deviation on either side of the mean.

Figure 22 further indicates that Class I students experience a gradual increase in idealism in Period II and a decrease in idealism (consequently, an increase in cynicism) in Period III. Similar changed of CI for Class III students are obtained when a comparison is made among scores of Periods I, II and III, with the exception that there is a sharper decrease of idealism (consequently an increase of cynicism) between Periods II and III. This decrease, however, does not approach statistical significance at the .05 level.

TABLE 80

MEANS, STANDARD DEVIATIONS, STANDARD ERRORS FOR MEDICAL FRESHMEN ON THE CYNICISM-IDEALISM INVENTORY[a] IN PERIODS I, II, AND III[b] BY THREE SOCIAL CLASSES

Social Class	Means for Period			Standard Deviations for Period			Standard Errors for Period		
	I	II	III	I	II	III	I	II	III
I	21.1500	22.3000	20.6000	3.5729	3.7570	4.2351	0.7989	0.8401	0.9470
II	21.3000	21.9310	21.0344	2.8905	2.4918	3.0176	0.5277	0.4627	0.5603
III	20.9697	21.6060	19.9090	2.8667	2.5852	2.9300	0.4990	0.4500	0.5100

N=82

[a]The Cynicism-Idealism Inventory was utilized to identify degrees of cynicism or idealism (or ambivalence) in the sample. This inventory consisted of 30 questions in which "correct" answers were indicative of idealism; "incorrect" answers were indicative of cynicism. If CI scores are reduced there is a decline in idealism (and consequently an increase of cynicism); if CI scores are increased there is an increase in idealism (and consequently a decrease of cynicism). Please see Chapter II and Appendix I.

[b]The Cynicism-Idealism Inventory was administered at three six-month intervals, namely, November 1962, August 1963, and in January 1964.

TABLE 81

DIFFERENCE IN MEANS, "t" TEST AND LEVELS OF SIGNIFICANCE FOR MEDICAL FRESHMEN ON THE CYNICISM-IDEALISM INVENTORY IN PERIODS I, II AND III BY THREE SOCIAL CLASSES

Social Classes	Difference in Means for Period			"t" Test for Period			Significance for Period		
	I	II	III	I	II	III	I	II	III
I and II	0.9175	0.8914	1.0348	-0.1635	0.4139	-0.4198	No significance for all social classes and periods		
I and III	0.8922	0.8712	0.9488	0.2021	0.7964	0.7018			
II and III	0.7260	0.6470	0.7562	0.4549	0.5022	1.4880			

N=82

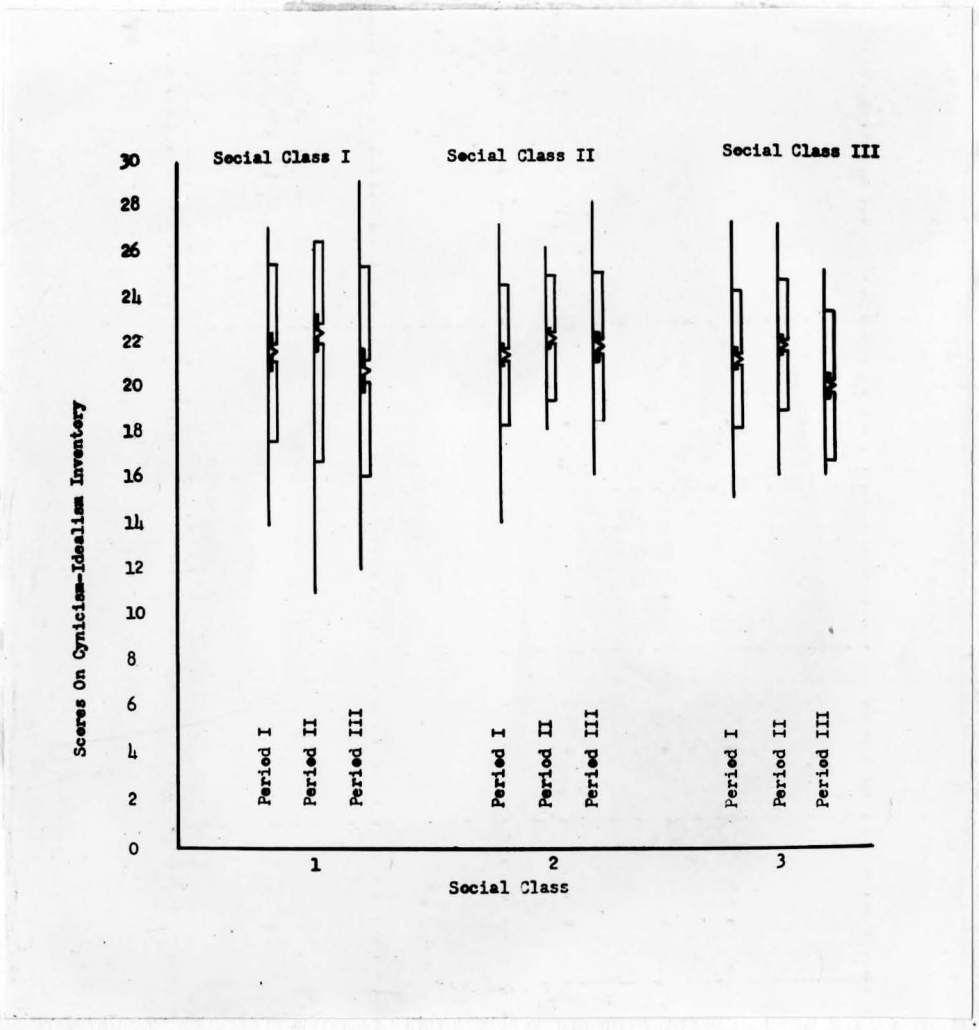

FIGURE 22

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN IN PERIODS I, II, AND III ON THE CYNICISM-IDEALISM INVENTORY BY THREE SOCIAL CLASSES

Cynicism-Idealism (CI) by Academic Achievement (AA).--The data presented in Tables 82 - 85 indicate that a medical student's academic achievement (AA) has no apparently relationship to scores obtained on the Cynicism-Idealism Inventory. An investigation of CI and AA in Periods I and II, II and III, I and III reveal that there is no statistical relationship between CI levels and AA of medical respondents in the sample.

TABLE 82

ACADEMIC ACHIEVEMENT (AA) AT MEDICAL SCHOOL BY CYNICISM-IDEALISM (CI) FOR PERIODS I AND II

Academic Achievement First Year Medical School	DIFFERENCE IN CI[a]			
	Reduced CI (-2 and Less)	No Change CI (-1, 1)	Increased CI (2 and Above)	Total
Upper 1/3	5 (4.8)	11 (13.7)	12 (9.5)	28
Middle 1/3	7 (4.6)	12 (13.2)	8 (9.2)	27
Lower 1/3	2 (4.6)	17 (13.2)	8 (9.2)	27
Total	14	40	28	82

$$X^2 = 87.42 - 82 - 5.42$$

$$p > .05$$

A "reduced CI is obtained if the difference of scores of a medical respondent is -2 and less for any two periods. A "no change" CI is obtained if the difference of scores of a medical respondent ranges from -1 to +1. An "increased" CI is obtained if the difference of scores of a medical respondent is 2 and above.

TABLE 83

ACADEMIC ACHIEVEMENT (AA) AT MEDICAL SCHOOL BY CYNICISM-IDEALISM (CI) FOR PERIODS II AND III

Academic Achievement	Reduced CI (-2 and Less)	No Change CI (-1, 1)	Increased CI (2 and Above)	Total
Upper 1/3	14 (13.7)	13 (12.3)	1 (2.0)	28
Middle 1/3	11 (13.2)	13 (11.9)	3 (1.9)	27
Lower 1/3	15 (13.2)	10 (11.9)	2 (1.9)	27
Total	40	36	6	82

$$X^2 = 84.48 - 82 = 2.48$$

$$p > .05$$

TABLE 84

ACADEMIC ACHIEVEMENT (AA) AT MEDICAL SCHOOL BY CYNICISM-IDEALISM (CI) FOR PERIODS I AND III

Academic Achievement	Reduced CI (-2 and Less)	No Change CI (-1, 1)	Increased CI (2 and Above)	Total
Upper 1/3	11 (10.6)	10 (10.9)	7 (6.5)	28
Middle 1/3	10 (10.2)	8 (10.5)	9 (6.3)	27
Lower 1/3	10 (10.2)	14 (10.5)	3 (6.3)	27
Total	31	32	19	82

$X^2 = 86.78 - 82 = 4.78$

$p > .05$

TABLE 85

CHANGE IN CYNICISM-IDEALISM (CI) FOR PERIODS I AND II: II AND III; I AND III BY ACADEMIC ACHIEVEMENT (AA) AT MEDICAL SCHOOL

Upper 1/3 AA			Middle 1/3 AA			Lower 1/3 AA		
Periods I and II	Periods II and III	Periods I and III	Periods I and II	Periods II and III	Periods I and III	Periods I and II	Periods II and III	Periods I and III
2	2	4	2	-3	-1	3	-8	-5
1	-1	0	2	1	3	4	-2	2
2	1	3	-1	3	2	0	-2	-2
7	-3	4	0	-4	-4	6	-5	1
3	-4	-1	3	0	3	-3	-2	1
0	0	0	-1	-1	-2	-1	-1	-2
1	-2	3	0	-1	-1	5	-3	-2
2	-3	-1	2	0	2	-1	1	0
2	-5	-3	1	0	1	4	0	-4
1	1	2	1	2	3	-1	1	0
1	-3	-2	-2	-2	-4	-1	-2	-3
-3	0	-3	0	-2	2	0	4	4
2	1	3	0	-5	-5	5	-3	2
-4	1	-3	2	-4	-2	-1	0	-1
1	-1	0	-2	4	2	0	-1	-1
2	-2	0	-2	-3	-5	-1	0	-1
3	-4	-1	-3	0	-3	0	0	0

TABLE 85 - CONTINUED

Upper 1/3 AA			Middle 1/3 AA			Lower 1/3 AA		
Periods I and II	Periods II and III	Periods I and III	Periods I and II	Periods II and III	Periods I and III	Periods I and II	Periods II and III	Periods I and III
-7	1	-6	-3	-1	2	0	0	0
0	-4	-4	-2	-1	1	1	-5	-4
0	-2	-2	-5	-2	-7	-2	-2	0
0	-1	-1	-1	0	-1	-1	0	-1
2	1	3	1	-3	-2	3	-4	-1
3	-4	-1	-1	-1	-2	-1	2	1
3	-5	-2	3	-4	-1	6	-5	1
0	-1	-1	3	-1	2	-1	2	-3
0	-5	-5	-1	0	-1	1	-5	-4
-2	-1	-3	3	-4	-1	0	-2	-2
-2	-3	-5						

The Internalization of Professional Attitudes (IPA) by Social Class (SC).--The hypothesis that the internalization of professional attitudes[6] (IPA) at medical school is significantly related to social class position (SC) is not supported by the data of Tables 86 and 87 and by Figure 23.[7]

In Period I (Figure 23) medical students in Social Class I and III have similar IPA levels in contrast to Class II students whose IPA level is lower. Although IPA differences of Class II respondents are less than either Class I or III these differences do not approach statistical significance at the .05 level.

In Period II, all three Classes (I, II, and III) exemplify similar IPA levels.

In Period III, Class II students portray higher IPA levels in contrast to Class I and III respondents whose IPA levels appear to be somewhat similar.

Although there are IPA differences by social class during Periods I and III of medical respondents in the sample, these differences are not statistically significant at the .05 level.

---

[6]See Chapter II and Appendix J

[7]The heavy vertical lines indicate the range of variation in IPA scores for a given SC during Periods I, II, and III. The mean is represented by a small triangle; the blackened part of each bar comprises twice the standard error of the mean on either side of the mean; one half of each black bar plus the white bar at either end outlines one standard deviation on either side of the mean.

Figure 23 further indicates that Class I medical students experience a gradual increase in IPA in Period II and a sharp decrease in IPA in Period III. IPA scores for Class I respondents in Periods I and III appear to be somewhat similar in contrast to IPA scores in Period II.

Class II respondents exemplify a gradual increase of IPA in Period II and a slight decrease of IPA in Period III. IPA scores for Class II students in Periods II and III appear to be somewhat similar in contrast to IPA scores in Period I.

Similar differences of IPA for Class III respondents are obtained when a comparison is made among scores of Periods I, II, and III with the exception that there is a sharp decrease of IPA between Periods II and III. This decrease, however, does not approach statistical significance at the .05 level.

TABLE 86

MEANS, STANDARD DEVIATIONS, STANDARD ERRORS FOR MEDICAL FRESHMEN ON THE STUDENT ATTITUDE INVENTORY[a] IN PERIODS I, II, AND III[b] BY THREE SOCIAL CLASSES

Social Class	Means for Period			Standard Deviations for Period			Standard Errors for Period		
	I	II	III	I	II	III	I	II	III
I	203.3500	206.4000	202.3000	16.4805	18.5228	18.1719	3.6852	4.1418	4.0633
II	198.4667	206.9310	204.9310	14.6422	14.6870	19.4292	2.6733	2.7273	3.6079
III	201.3939	206.3939	201.6666	13.1552	12.6761	12.2492	2.2900	2.2066	2.1323

N=82

[a]The Student Attitude Inventory utilized in this study was developed by Dr. Edwin F. Rosinski, Director of Research in Medical Education, Medical College of Virginia. The reliability coefficient for the entire inventory was .89. This inventory measures attitudes towards seven objectives of medical education (See Chapter II and Appendix J). Scoring of each item is accomplished on a five-point scale (0-4) according to the degree of reaction to the attitude statement. When gathered into section scores the polar continuum would be represented by zero at one end and at the other by a positive figure whose magnitude would be 40. Therefore, the maximum score an individual can receive from the 70 attitude-statements if 280.

[b]The Student Attitude Inventory (IPA) was administered at three six-month intervals, namely, November 1962, August 1963, and in January 1964.

TABLE 87

DIFFERENCE IN MEANS, "t" TEST AND LEVELS OF SIGNIFICANCE FOR MEDICAL FRESHMEN ON THE STUDENT ATTITUDE INVENTORY IN PERIODS I, II, AND III BY THREE SOCIAL CLASSES

Social Classes	Difference in Means for Period			"t" Test for Period			Significance for Period		
	I	II	III	I	II	III	I	II	III
I and II	4.4445	4.7512	5.5024	1.0987	-0.1117	-0.4781	No Significance for all three social classes and periods		
I and III	4.1043	4.2849	4.1760	0.4766	0.0014	0.1516			
II and III	3.5019	3.4747	4.0739	-0.8359	0.1545	0.8012			

N=82

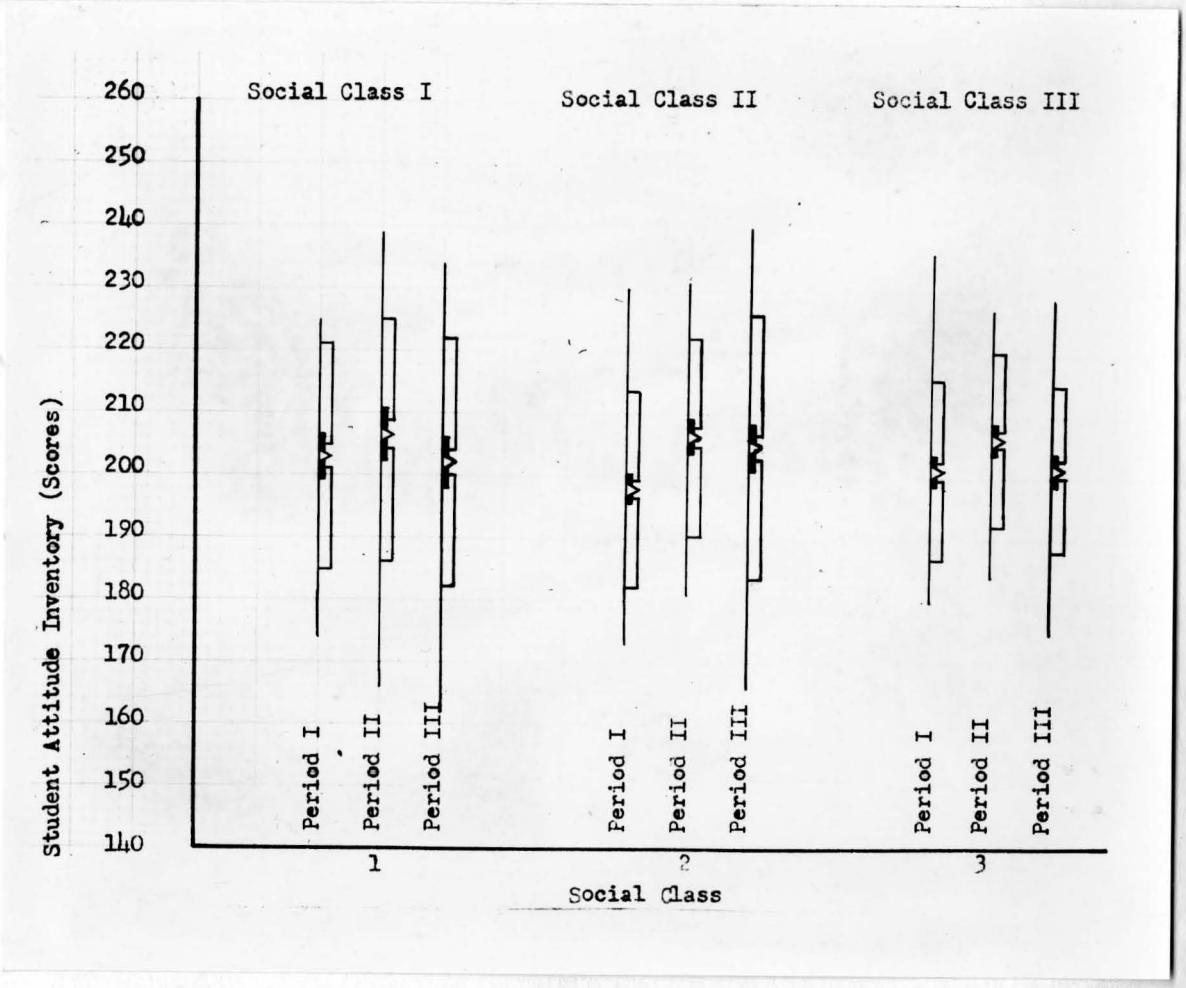

FIGURE 23

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN IN PERIODS I, II, AND III ON THE STUDENT ATTITUDE INVENTORY BY THREE SOCIAL CLASSES

Internalization of Professional Attitudes (IPA) by Academic Achievement (AA).--The data presented in Tables 88 - 91 indicate that a medical student's academic achievement (AA) is not directly related to scores obtained on the Medical Student Attitude Inventory, which reflects the Internalization of Professional Attitudes (IPA). An investigation of IPA and AA in Periods I and II, II and II, I and II reveal no statistical relationship between IPA levels and AA of medical respondents in the sample.

TABLE 88

ACADEMIC ACHIEVEMENT (AA) AT MEDICAL SCHOOL BY INTERNALIZATION OF PROFESSIONAL ATTITUDES (IPA) FOR PERIODS I AND II

Academic Achievement	CHANGE IN IPA[a]			
	Reduced -6 and Less	No Change (-s, s)	Increased 6 and Above	Total
Upper 1/3	3 (5.1)	3 (8.2)	16 (14.7)	28
Middle 1/3	7 (4.9)	7 (7.9)	13 (14.2)	27
Lower 1/3	5 (4.9)	8 (7.9)	14 (14.2)	27
Total	15	24	43	82

$$X^2 = 84.15 - 82 = 2.15$$

$$p > .05$$

[a]A "reduced"IPA is obtained if the difference of scores of a medical respondent is -6 or less for any two periods. A "no change " IPA is obtained if the difference of scores of a medical respondent ranges from -5 to +5. An "increased" IPA is obtained if the difference of scores of a medical respondent is 6 and above.

TABLE 89

ACADEMIC ACHIEVEMENT (AA) AT MEDICAL SCHOOL BY INTERNALIZATION OF PROFESSIONAL ATTITUDES (IPA) FOR PERIODS II AND III

Academic Achievement	CHANGE IN IPA			
	Reduced (-6 and Less)	No Change (-5, +5)	Increased (6 and Above)	Total
Upper 1/3	16 (13)	7 (8.6)	5 (6.6)	28
Middle 1/3	9 (12.3)	11 (8.3)	7 (6.3)	27
Lower 1/3	13 (12.3)	7 (8.3)	7 (6.3)	27
Total	38	25	19	82

$X^2 = 86.78 - 82 = 4.78$

$p > .05$

TABLE 90

ACADEMIC ACHIEVEMENT (AA) AT MEDICAL SCHOOL
BY INTERNALIZATION OF PROFESSIONAL ATTITUDES
(IPA) FOR PERIODS I AND III

Academic Achievement	CHANGE IN IPA			
	Reduced (6 and Less)	No Change (-5, +5)	Increased (6 and Above)	Total
Upper 1/3	11 (9.9)	7 (7.5)	10 (10.6)	28
Middle 1/3	8 (9.6)	11 (7.2)	8 (10.2)	27
Lower 1/3	10 (9.6)	4 (7.2)	13 (10.2)	27
Total	29	22	31	82

$X^2 = 87.14 - 82 = 5.14$

$p > .05$

TABLE 91

CHANGE IN THE INTERNALIZATION OF PROFESSIONAL ATTITUDES (IPA) FOR PERIODS I AND II; II AND III; I AND III BY ACADEMIC ACHIEVEMENT (AA) AT MEDICAL SCHOOL

Upper 1/3 AA			Middle 1/3 AA			Lower 1/3 AA		
Periods I and II	Periods II and III	Periods I and III	Periods I and II	Periods II and III	Periods I and III	Periods I and II	Periods II and III	Periods I and III
-42	-24	-18	5	-4	1	-1	-10	-11
0	-20	-20	-13	16	3	13	-2	11
-5	-9	-14	9	-5	4	7	8	15
13	-11	2	1	3	4	-13	-4	-17
17	0	17	4	5	9	12	-6	6
24	8	32	-3	26	23	30	-12	18
19	-22	-3	4	-22	-18	2	6	8
14	12	*26	-20	2	-18	-4	-13	-17
-16	-4	-20	-11	6	-5	12	-2	10
11	-25	-14	12	2	14	54	-18	36
12	-6	6	17	-39	-22	0	16	16
6	-15	-9	10	-24	-14	-17	-11	3
12	24	36	15	-35	-20	15	-12	-8
-17	10	-7	23	-11	12	-7	10	-7
12	0	12	38	3	41	34	-15	0
3	-15	-12	-8	-9	-17	5	-4	-11

TABLE 91 - CONTINUED

Upper 1/3 AA			Middle 1/3 AA			Lower 1/3 AA		
Periods I and II	Periods II and III	Periods I and III	Periods I and II	Periods II and III	Periods I and III	Periods I and II	Periods II and III	Periods I and III
3	-5	-2	-12	-7	-5	6	-14	-20
7	24	31	10	-5	5	10	-29	-24
0	-17	-17	5	6	11	1	0	6
6	-7	-1	-1	6	5	32	-7	3
13	-8	5	-12	3	-9	-15	2	3
-2	-2	-4	-10	3	-7	13	-21	11
14	-6	8	8	-3	5	-15	11	-6
6	-2	4	15	10	25	13	10	23
16	3	19	6	-8	-2	13	-2	11
2	-26	-24	15	-10	5	-9	-16	-25
1	-11	-10	18	-6	12	5	14	9
3	-16	19						

Summary.--Results in this chapter indicate that:

1) Stress-anxiety responses (SA) at medical school are not significantly related to social class position (SC) during the pre-clinical years of medicine.

2) In Period I medical students in Class I and III have somewhat similar SA levels in relation to Class II respondents whose SA level is lower.

3) In Period II Class I respondents' scores indicate a greater degree of SA than Class II and III students whose SA levels are somewhat similar and lower.

4) In Period III Class II students' scores indicate a lower degree of SA levels than Class I and III respondents whose SA levels are somewhat similar.

5) Class I students experience a gradual decrease of SA over three periods; for Class II students there is no significant change of SA in Periods I and II but a slight decrease of SA in Period III; for Class III respondents there is a marked decrease of SA during Period II and III in contrast to Period I.

6) A medical student's academic achievement (AA) is not directly related to his stress-anxiety (SA) responses during the pre-clinical years of medical school.

7) Cynicism-idealism (CI) at medical school is not significantly related to social class position (SC) during the pre-clinical years of medicine.

Summary (continued).--

8) In Period I medical students in Class I and II have somewhat similar CI levels in relation to Class III respondents whose CI level is lower.

9) In Period II Class I students exemplify a higher CI level in contrast to Class II and III respondents whose CI levels are somewhat similar and lower.

10) In Period III Class II students show higher CI levels in contrast to Class I and III respondents whose CI levels appear to be about the same.

11) Class I students experience a gradual increase in idealism in Period II and a decrease in idealism (consequently an increase in cynicism) in Period III.

12) Class II respondents exemplify a gradual increase of idealism in Period II and a slight decrease of idealism (consequently a slight increase of cynicism) in Period III.

13) Similar changes in CI for Class III students (as compared with upper and middle-class students) are obtained when a comparison is made among scores of Periods I, II, and III with the exception that there is a sharp decrease of idealism (consequently an increase of cynicism) between Periods II and III.

14) A medical student's academic achievement (AA) is not directly related to scores obtained on the Cynicism-Idealism Inventory during the pre-clinical years of medicine.

Summary (continued).--

15) The internalization of professional attitudes (IPA) at medical school is not significantly related to social class (SC) during the pre-clinical years of medicine.

16) Medical students in Class I and III show somewhat similar IPA levels in contrast to Class II students whose IPA level is lower in Period I.

17) In Period II all three Classes (I, II, and III) exemplify similar IPA levels.

18) In Period III Class II students register higher IPA scores in contrast to Class I and III respondents whose IPA levels appear to be somewhat lower and similar.

19) Class I medical students first show a gradual increase in IPA in Period II and a sharp decrease in IPA in Period III.

20) IPA scores for Class I respondents in Periods I and III appear to be somewhat similar in contrast to higher IPA scores in Period II.

21) Class II respondents have a gradual increase in IPA in Period II and a slight decrease in IPA in Period III. IPA scores for Class II students in Periods II and III appear to be somewhat similar in contrast to IPA scores in Period I.

22) Slight changes of IPA for Class III respondents are obtained when a comparison is made among scores of Periods I, II, and III with the exception that there is a sharp

Summary (continued).--

of IPA between Periods II and III.

23) A medical student's academic achievement (AA) is not directly related to cynicism-idealism (CI) during the pre-clinical years of medicine.

In brief, the findings reported in this chapter tend to indicate that no significant statistical relationships were found between social class as independent variable and the following three dependent variables: SA, CI, and IPA.

This chapter further investigated the empirical question, whether or not academic achievement (AA) in the first year of medical school is significantly related to SA, CI, and IPA. Results have tended to indicate that no significant relationships were found between AA and SA; AA and CI; AA and IPA.

Although the four basic hypotheses showed no confirmation, there seems to be a set of attitudes and values which appear to be critical for the selection procedures of medical applicants and their adjustment to the total environment of the sub-culture of the medical school. This set of attitudes and values is examined in the following chapter.

CHAPTER VI

STRESS-ANXIETY RESPONSES (SA), CYNICISM-IDEALISM (CI), THE INTERNALIZATION OF PROFESSIONAL ATTITUDES (IPA), AND THE PROFESSIONALIZATION PROCESS

This chapter reports the findings on the relationships between stress-anxiety (SC) responses, cynicism-idealism (CI), and the internalization of professional attitudes (IPA). It also further investigates the professionalization process of medical students in the sample as they moved through successive phases of a status-sequence during their pre-clinical years of medical school.

Stress-Anxiety (SA) by Cynicism-Idealism (CI).--The data presented in Tables 92 - 94 indicate that a medical student's stress-anxiety responses (SA) are directly related to scores obtained on the Cynicism-Idealism Inventory (CI). Thus as stress-anxiety increases, cynicism-idealism also increases. An investigation of SA and CI in Periods I and II, II and III, I and III reveals that there is a positive statistical relationship between SA levels and CI of medical respondents in the sample.

This aspect of the research, therefore, indicates that there is a statistical relationship between stress-anxiety responses (SA) and cynicism-idealism (CI) of respondents at the termination of the pre-clinical years of medical school. The finding could be construed as an empirical confirmation of Becker's proposition

that "the growth of both cynicism and idealism are not simple developments, but are instead complex transformations; and the very notions 'idealism' and 'cynicism' must be seen as situational in their expressions rather than as stable traits possessed by individuals in greater or lesser degree."[1]

---

[1]Becker and Geer, pp. 50-56.

TABLE 92

STRESS-ANXIETY RESPONSES (SA)[a] AT MEDICAL SCHOOL BY CYNICISM-IDEALISM (CI)[b] FOR PERIODS I AND II

Change in SA	CHANGE IN CI			
	Increased (2 or more)	No Change (1, -1)	Reduced (-2 or less)	Total
Increased (3 or more)	24	3	8	35
No Change (2, -2)	-	6	-	6
Reduced (-3 and less)	18	7	16	41
Total	42	16	24	82

N = 82 $X^2 = 112.60 - 82 = 30.60$

$p > .05$

[a] SA reduced = decline in Stress-Anxiety

[b] CI reduced = decline in Idealism; increase in Cynicism

TABLE 93

STRESS-ANXIETY RESPONSES (SA) AT MEDICAL SCHOOL BY CYNICISM-IDEALISM (CI) FOR PERIODS I AND III

Change In SA	CHANGE IN CI			
	Increased (2 and More)	No Change (1, -1)	Reduced (-2 and Less)	Total
Increased (3 and More	7 (3.5)	7 (5.9)	1 (5.7)	15
No Change (2, -2)	5 (6.2)	9 (10.5)	13 (10.2)	27
Reduced (-3 and Less)	7 (9.3)	16 (15.6)	17 (15.1)	40
Total	19	32	31	82

N = 82

$$X^2 = 91.61 - 82 = 9.61$$

$$p > .05$$

[a] SA reduced = decline in Stress-Anxiety

[b] CI reduced = decline in Idealism; increase in Cynicism

TABLE 94

STRESS-ANXIETY RESPONSES (SA)[a] AT MEDICAL SCHOOL BY CYNICISM-IDEALISM (CI)[b] FOR PERIODS II AND III

Change in SA	CHANGE IN CI			
	Increased (2 and More)	No Change (1, -1)	Reduced (-2 and Less)	Total
Increased	- (6.2)	8 (8.7)	10 (3.1)	18
No Change (2, -2)	16 (13.0	20 (18.5)	2 (6.5)	38
Reduced (-3 and Less)	12 (8.9)	12 (12.7)	2 (4.4)	26
Total	28	40	14	82

N = 82

$$X^2 = 109.95 - 82 = 27.95$$

$$p > .05$$

[a]
[b]SA reduced = decline in Stress-Anxiety
CI reduced = decline in Idealism; increase in Cynicism

Stress-Anxiety (SA) by the Internalization of Professional Attitudes (IPA).--The data presented in Tables 95 - 97 indicate the statistical relationships of the medical students' stress-anxiety responses (SA) to scores obtained on the Medical Student Attitude Inventory, indicative of the internalization of professional attitudes (IPA). Thus, as stress-anxiety responses increase there are corresponding increases in the internalization of professional attitudes.

A partial explanation of the above relationship of SA and IPA in Periods II and III may be due to the magnitude of the intellectual, psychological and emotional demands made upon the student during his sophomore year of medical school.

TABLE 95

STRESS-ANXIETY RESPONSES (SA)[a] AT MEDICAL SCHOOL BY INTERNALIZATION OF PROFESSIONAL ATTITUDES (IPA)[b] FOR PERIODS I AND II

Change in SA	CHANGE IN IPA			
	Increased (6 or More)	No Change (+5, -5)	Reduced (-6 or Less)	Total
Increased	25 (24.3)	- (1.3)	10 (9.4)	35
No Change	6 (4.2)	- (0.2)	- (1.6)	6
Reduced	26 (28.5)	3 (1.5)	12 (11)	41
Total	22	3	22	82

N = 82

$X^2 = 72.65 - 82 = 0.35$

$p > .05$

[a] When SA declines (Stress Anxiety declines)

[b] When IPA declines (the Internalization of Professional Attitudes declines)

TABLE 96

STRESS-ANXIETY RESPONSES (SA)[a] AT MEDICAL SCHOOL BY INTERNALIZATION OF PROFESSIONAL ATTITUDES (IPA)[b] FOR PERIODS I AND III

Change in SA	CHANGE IN IPA			
	Increased (6 or More)	Relatively No Change 5, -5)	Reduced (-6 and Less)	Total
Increased (3 and More)	3 (5.7)	7 (4.0)	5 (5.3)	15
No Change (2, -2)	14 (10.2)	6 (7.3)	7 (9.6)	27
Reduced (-3 and Less)	14 (15.1)	9 (10.7)	17 (14.1)	40
Total	31	22	29	82

N = 82

$$X^2 = 88.83 - 82 = 6.83$$

$$p > .05$$

[a] When SA declines (Stress Anxiety decline)

[b] When IPA declines (the Internalization of Professional Attitudes decline)

TABLE 97

STRESS-ANXIETY RESPONSES (SA) AT MEDICAL SCHOOL BY INTERNALIZATION OF PROFESSIONAL ATTITUDES (IPA) FOR PERIODS II AND III

Change in SA	CHANGE IN IPA			
	Increased (6 and More)	No Change (5, -5)	Reduced (-6 and Less)	Total
Increased	- (4.2)	3 (5.5)	15 (8.3)	18
No Change (2, -2)	15 (8.8)	13 (11.6)	10 (17.6)	38
Reduced (-3 and Less)	4 (6.0)	9 (7.9)	13 (12.1)	26
Total	19	25	38	82

N = 82

$X^2 = 101.45 - 82 = 19.45$

$p > .05$

Cynicism-Idealism (CI) by Internalization of Professional Attitudes (IPA).--The data presented in Tables 98 - 100 indicate that a medical student's cynicism-idealism responses (CI) has no direct relationship to scores obtained on the Medical Student Attitude Inventory. An investigation of CI and IPA in Periods I and II, I and III, II and III reveals that there is no statistical relationship between CI levels and IPA of medical respondents in the sample.

TABLE 98

CYNICISM-IDEALISM (CI)[a] AT MEDICAL SCHOOL BY INTERNALIZATION OF PROFESSIONAL ATTITUDES (IPA)[b] FOR PERIODS I AND II

Change in CI	CHANGE IN IPA			
	Increased (6 or More)	No (5, -5)	Reduced (-6 and Less)	Total
Increased	10 (6.2)	1 (0.9)	13 (16.9)	24
No	1 (4.1)	1 (0.9)	14 (11.3)	16
Reduced	10 (10.8)	1 (1.5)	31 (29.7)	42
Total	21	3	58	82

N = 82

$$X^2 = 88.79 - 82 = 6.79$$

$$p > .05$$

[a]CI reduced = decline in Idealism; increase in Cynicism

[b]IPA declines - decline in the Internalization of Professional Attitudes

TABLE 99

CYNICISM-IDEALISM (CI) AT MEDICAL SCHOOL BY INTERNALIZATION OF PROFESSIONAL ATTITUDES (IPA) FOR PERIODS II AND III

Change in CI	CHANGE IN IPA			
	Increased (6 and More)	No Change (5, -5)	Reduced (-6 and Less)	Total
Increased 2 and More	2 (3.3)	3 (4.2)	9 (6.5)	14
No Change (1, -1)	10 (9.2)	11 (12.2)	19 (18.6)	40
Reduced (-2 and Less)	7 (6.5)	11 (8.5)	10 (13.0)	28
Total	19	25	38	82

N = 82

$X^2 = 85.46 - 82 = 3.46$

$p > .05$

TABLE 100

CYNICISM-IDEALISM (CI) AT MEDICAL SCHOOL BY INTERNALIZATION OF PROFESSIONAL ATTITUDES (IPA) FOR PERIODS I AND II

Change in CI	CHANGE IN IPA			
	Increased (6 and More)	No Change (5, -5)	Reduced (-6 and Less)	Total
Increased (2 and More)	3 (7.1)	8 (6.2)	8 (6.5)	19
No Change (1, -1)	15 (12.0)	8 (8.4)	9 (11.2)	32
Reduced (-2 and Less)	13 (11.5)	6 (8.1)	12 (11.0)	31
Total	31	22	29	82

N = 82

$X^2 = 87.27 - 82 = 5.27$

$p > .05$

The Professionalization Process During the Pre-clinical Years of Medical School.--The process of socialization has been generally recognized as a key dimension in the study of professions.[2] Leonard Reissman asserts that

> a student training for such a career achieves not only the necessary knowledge and skills, but at the same time is indoctrinated with a set of attitudes which are equally as necessary if he is to fulfill his professional role properly.[3]

Merton has succinctly defined this process for medical students, as one in which they "are engaged in learning the professional role of the physician by so combining its components knowledge and skills, attitudes, and values, as to be motivated and able to perform this role in a professionally and socially acceptable fashion."[4]

Professionalization, as it is used in this research, is a process of socialization. In this context, Bloom notes that "it involves a matrix of social relations in which the medical student internalizes and makes his own the attitudes and values which will largely determine his future professional role."[5]

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[2]Reissman and Platou, "The Motivation and Socialization of Medical Students," pp. 174-182.

[3]Ibid., p. 174

[4]Merton, "Some Preliminaries to a Sociology of Medical Education," in The Student-Physician, p. 41.

[5]Bloom, "Some Implications of Studies in the Professionalization of the Physician," in Patients, Physicians and Illness, p. 313.

Results in this study have tended to indicate from a statistical viewpoint that social class differences in attitudes toward certain moral and ethical objectives of the medical profession are not found to obtain among medical students in the sample at the pre-clinical level of their training (Figure 24). This would suggest that some students, by the mere fact that they are within a particular social class, do not necessarily experience greater difficulty than others in the internalization of these attitudes of the medical profession, even assuming academic achievement to be constant from a statistical perspective (Figure 25). Further, results have previously demonstrated that academic achievement (AA) in medical school has no direct relationship to the internalization of professional attitudes (IPA) of medical respondents in the sample.

However, from an operational point of view, it is to be noted that although the fluctuations of stress-anxiety responses in Periods I, II, and III among respondents of different social class backgrounds (Figure 26) are not statistically significant, these responses significantly influence the internalization of professional attitudes of medical students in Periods II and III. Thus, as stress-anxiety responses increase there are corresponding increases in the internalization of professional attitudes. A partial explanation, submitted previously, may be that the magnitude of the intellectual, psychological and emotional demands made upon

the student is intensified during his sophomore year of medical school.

Additionally, from the viewpoint of the professionalization process, the findings of the study in terms of cynicism-idealism (CI) and the internalization of professional attitudes (IPA) suggest that although there are differences of scores in Periods I, II, and III among respondents of the three social groups (Figure 27), the CI scores are not significantly associated with the IPA of medical students in the sample.

In summary, the findings pertaining to the professionalization process reported in this chapter suggest that social class (SC), academic achievement (AA), and cynicism-idealism (CI) are not significantly related to the internalization of professional attitudes (IPA) of the medical respondents. Stress-anxiety responses (SA), however, do have a significant relationship to IPA (that is, as stress-anxiety responses increase, there are corresponding increases in the internalization of professional attitudes) in terms of whether or not a medical student internalizes the attitudes and values of medicine during his pre-clinical years of medical school--attitudes and values which will largely determine his future professional role.

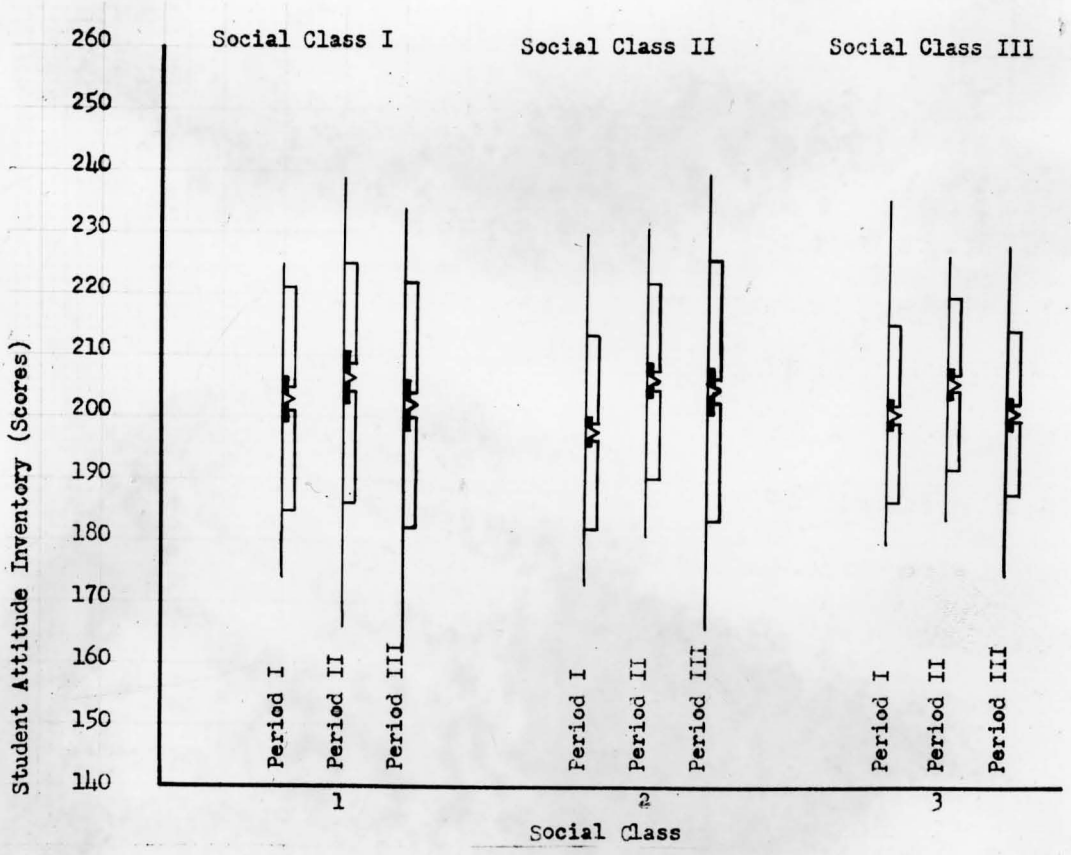

FIGURE 24

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN IN PERIODS I, II, AND III ON THE STUDENT ATTITUDE INVENTORY BY THREE SOCIAL CLASSES

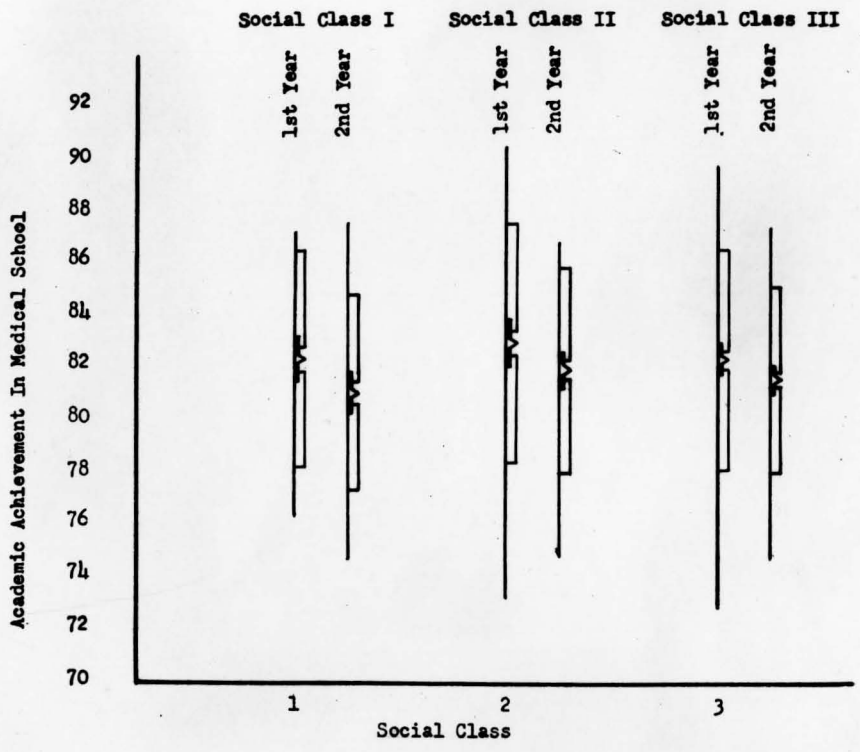

FIGURE 25

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN'S ACADEMIC ACHIEVEMENT IN THE FIRST AND SECOND YEAR OF MEDICAL SCHOOL BY THREE SOCIAL CLASSES

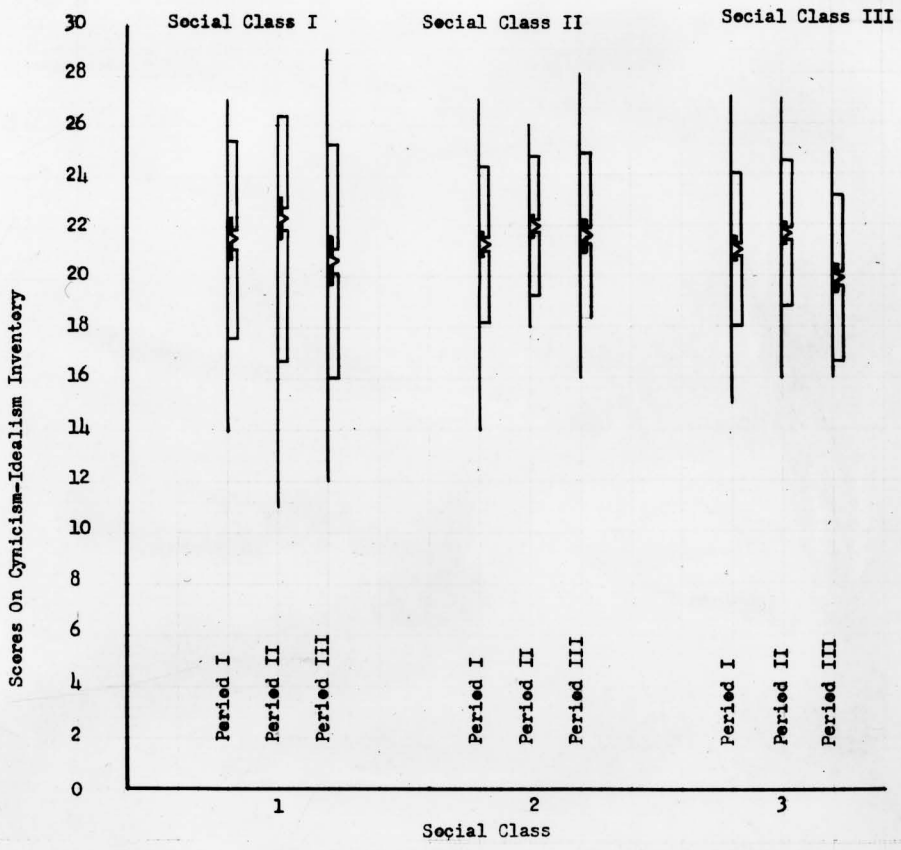

FIGURE 26

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN IN PERIODS I, II, AND III ON THE CYNICISM-IDEALISM INVENTORY BY THREE SOCIAL CLASSES

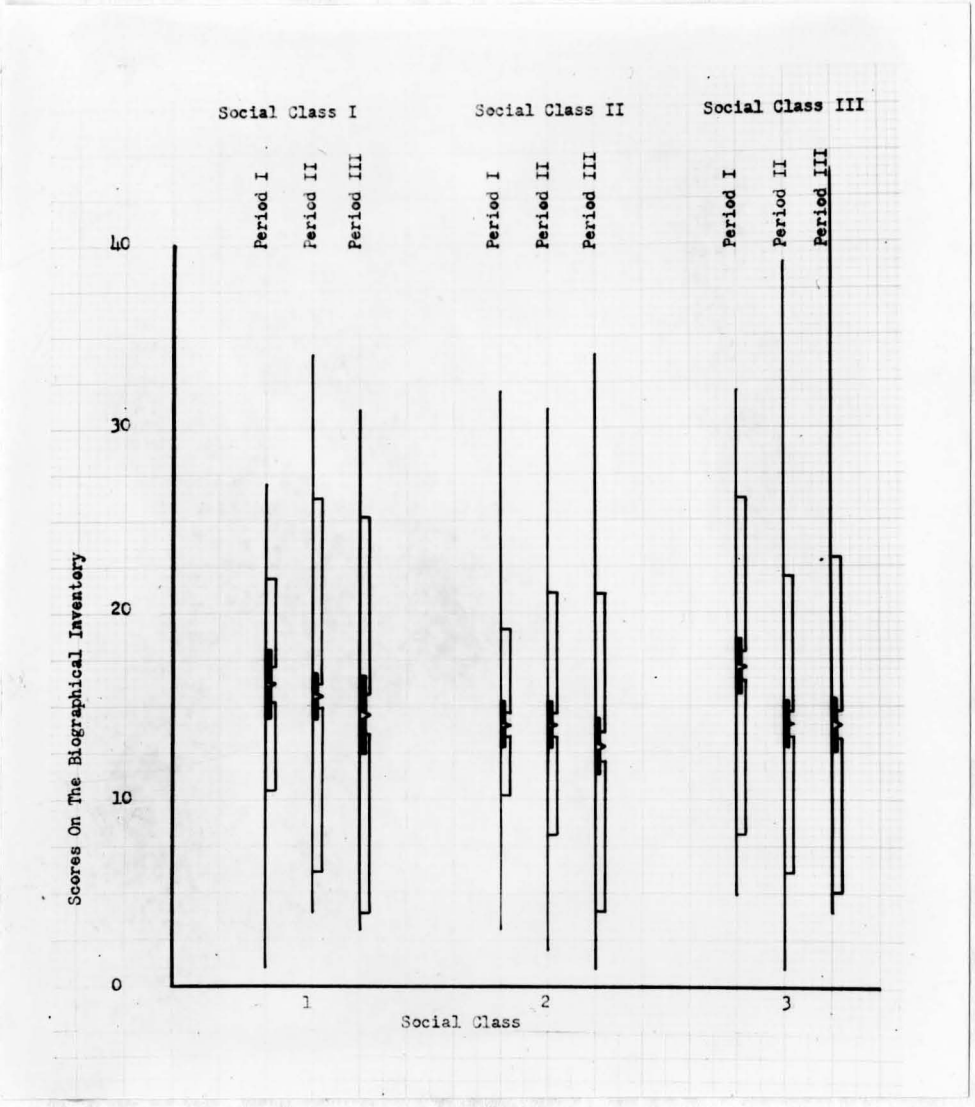

FIGURE 27

RELATIONSHIP OF MEANS, STANDARD ERRORS, STANDARD DEVIATIONS FOR MEDICAL FRESHMEN IN PERIODS I, II, AND III ON THE BIOGRAPHICAL INVENTORY BY SOCIAL CLASS

Summary.--Results in this chapter indicate that:

1) Stress-anxiety responses (SA) at medical school are significantly related to cynicism-idealism (CI) of medical respondents during the pre-clinical years of medicine.

2) The positive statistical relationship between SA and CI levels during Periods I, II, and III could be construed as an empirical confirmation of Becker's proposition that "the very notions 'idealism' and 'cynicism' must be seen as situational in their expressions rather than as stable traits possessed by individuals in greater or lesser degree."[6]

3) In Periods I and II, I and III there is a negative statistical relationship between SA and IPA levels of medical respondents in the sample.

4) In Periods II and III stress-anxiety responses (SA) of students have a direct relationship to scores obtained on the Medical Student Attitude Inventory (also called IPA).

5) A partial explanation of the above relationship of SA and IPA in Periods II and III may be due to the magnitude of the intellectual, psychological and emotional demands made upon the student during his sophomore year of medical school. Thus, as stress-anxiety responses increase there

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[6]Becker and Geer, "The Fate of Idealism in Medical School," op. cit., pp. 50-56.

Summary (continued).--

are corresponding increases in the internalization of professional attitudes.

6) Cynicism-idealism (CI) at medical school is not significantly related to the internalization of professional attitudes (IPA) of medical respondents during the preclinical years of medicine.

7) Students, by the mere fact that they are within a particular social class, do not necessarily experience greater difficulty than others in the internalization of the professional attitudes and values (IPA) of medicine, assuming academic achievement to be constant from a statistical perspective.

8) Results have previously demonstrated that academic achievement (AA) in medical school is not directly related to the internalization of professional attitudes (IPA) of medical respondents in the sample.

9) From an operational point of view, it is noted that although the fluctuations of stress-anxiety responses (SA) in Periods I, II, and III among respondents of different social class backgrounds are not statistically significant, these responses are significantly related to the internalization of professional attitudes (IPA) of medical students in Periods II and III.

Summary (continued).--

10) Further, from the viewpoint of the professionalization process, the findings of the study in terms of cynicism-idealism (CI) and the internalization of professional attitudes (IPA) suggest that although there are differences of scores in Periods I, II, and III among respondents of the three social classes, the CI scores are not significantly related to the IPA of medical students in the sample.

In brief, the findings reported in this chapter tend to indicate that a medical student's stress-anxiety responses (SA) are directly related to scores obtained on the Cynicism-Idealism Inventory (CI).

It would appear that the greater the level of stress and anxiety of the medical student, the more likely he is to reflect idealistic attitudes and the lower the level of stress and anxiety the more likely the student will reflect cynical attitudes toward the medical profession.

The intensification of stress-anxiety responses (SA) and the internalization of professional attitudes (IPA) in Periods II and III might suggest that they are latent changes which are actualized over time in the professionalization process. These changes do not become manifest in time between Periods I and II.

The implications of the findings reported in this chapter and

Summary (continued).--

the preceding chapter and the suggestions they provide for future research are discussed in the following concluding chapter.

CHAPTER VII

SUMMARY AND CONCLUSIONS

The purpose of this chapter is twofold: a) to summarize briefly this research and its findings, b) to submit suggestions for further studies.

Summary and Findings.--The research reported in this dissertation was the investigation of some selected empirical questions relevant to pre-clinical medical students in terms of social class (SC), average grade in college (AGC), the Medical College Admission Test (MCAT), academic achievement in medical school (AA), stress-anxiety responses (SA), cynicism-idealism (CI), and the internalization of professional attitudes (IPA). It also investigated the professionalization process of medical respondents in the sample as they moved through successive phases of a status-sequence during their pre-clinical years of medical school.

Empirical Questions.--The empirical questions at issue in this research were:

1) Do medical students from families of upper class background more often be found at higher levels of academic achievement in the first year of medical school?

    a) Social class
    b) Grades

2) Is the level of stress and anxiety related to academic achievement (in the first year) at medical school, and if so, is this level of stress and anxiety associated with social class?

   a) Level of stress and anxiety
   b) Grades
   c) Social class

3) Do middle and lower class medical students more frequently experience anxiety in the first and second years of medical school?

   a) Social class
   b) Anxiety

4) Does the internalization of professional attitudes of medical students from the upper classes tend to be easier than for medical students from the lower classes?

   a) Internalization of professional attitudes
   b) Social class

5) Do medical students from families of upper class background tend to express a low degree of cynicism and a relatively high degree of idealism in the pre-clinical years of medical school?

   a) Social class
   b) Cynicism-Idealism

6) Do medical students from the lower classes experience more difficulty and/or less desire to become members of a fraternity?

   a) Social class
   b) Membership in fraternity

Hypotheses of the Present Study.--The theoretical considerations and the empirical questions presented in this chapter give rise to four hypotheses. They were as follows:

1) Medical students from families of upper class background will more often be found at higher levels of academic achievement; medical students from families of middle and lower class background will more often be found at lower levels of academic achievement.

2) Medical students from families of upper class background will tend to express a relatively lower degree of stress and anxiety. Medical students from families of middle and lower class background will tend to express a relatively high degree of stress and anxiety.

3) Because of previous socialization, the internalization of professional attitudes of medical students from the upper classes will tend to be easier than for medical students from the middle and lower classes.

4) Medical students from families of upper class background will tend to express a low degree of cynicism and a relatively high degree of idealism in the pre-clinical years of medical school. Medical students from families of middle and lower class background will tend to express a relatively high degree of cynicism and a relatively low degree of idealism in the pre-clinical years of medical school.

Additionally an attempt is made to investigate whether or not there are changing values and attitudes of the medical students as they move through successive phases of a status-sequence during their pre-clinical years of medicine.

The research data in the present study were gathered mainly through the use of the structured interview technique. The structured interview schedule provided, among other things, information on the education, occupation, and income of the students' fathers, the motives for entering medicine, and membership in a fraternity. A two-page questionnaire containing five questions was administered to each medical student. In addition the following were used:

Taylor's Personality Scale of Manifest Anxiety[1] was utilized

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[1]Taylor, "A Personality Scale of Manifest Anxiety," pp. 285-290.

to measure the medical students' level of stress and anxiety (SA).

Attitude changes were analyzed by the Medical Student Attitude Inventory[2] in relation to seven specific objectives in medical education such as the respect for the dignity, self esteem and value of man. This was used to indicate the Internalization of Professional Attitudes (IPA).

The Cynicism-Idealism Inventory,[3] consisting of twenty-four questions, was utilized to identify degrees of cynicism or idealism (or ambivalence) in the sample (CI).

Social class (SC) was measured by Hollingshead's two-factor Index of Social Position, a scale based on the weighted measures of the occupation and education of the students' fathers. The index of medical school academic achievement (AA) was examination grades obtained at the end of the first year of medical school. The second year grade averages in medical school served as an additional operational measure of the professionalization process during the pre-clinical years of medicine.

Information on the undergraduate institution the students attended, their college grades (AGC), and scores on the Medical College Admission Test (MCAT), including the four sections of the test, was obtained from official records relating to 82 medical students in the sample. All these were utilized.

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[2]Rosinski, "Professional, Ethical and Intellectual Attitudes of Medical Students," pp. 1016-1022.

[3]See Appendix F.

The participant observation technique was additionally used, since the writer had lived with 52 (63.4 per cent) of the medical respondents in the sample. A group of 82 of 90 medical students who constituted the 1962-1963 freshman class, and the 1963-1964 sophomore class of a midwestern school of medicine made up the sample of study.

The interviews and the administration of the three inventories (the Biographical Inventory BA, the Idealism-Cynicism Inventory CI, and the Medical Student Attitude Inventory IPA were commenced on November 21, 1962, and these were completed by January 28, 1963. The three inventories were again administered in August 1963, and in January 1964.

It was feared that a foreign student, Caucasian by race, British by nationality, Indian by ethnicity, with former residence in British Guiana, South America, might encounter some extreme difficulties in interviewing eighty-two American freshman medical students; that they might prove unwilling to submit to interviewing or be reluctant to answer the various questions should they be agreeable to the interview. Fortunately, such fears were almost wholly unrealized, and the freshman medical students proved to be extremely cooperative and uninhibited.

A factor of undoubted importance was the initial careful explanation to each medical student that the interview would be strictly confidential. In every case the medical student was assured that he would not be identified by name nor would any

person or place he mentioned be listed by name in the final result. Every attempt was made to establish rapport before the interview proper began. It is significant that only one medical student refused to be interviewed, and this was due to his religious commitments.

An appointment was made for each medical student either in person or by telephone. Each interview was completed in one visit; three of the interviews required more than one attempt at appointments. In each case, the medical student called and requested a later appointment.

The interviews of all male medical students and the administration of the three inventories (The Biographical Inventory SA, the Idealism-Cynicism Inventory CI, and the Medical Student Attitude Inventory IPA) were held in two separate and private rooms at one of the national medical fraternity houses, Phi Sigma of Phi Chi and Phi Beta Phi. Male medical students who lived at home or in private apartments were requested to be present at one of the fraternity houses at an appointed time. The interviews and the administration of the three inventories of the four female medical students in the sample were conducted in their place of residence in the Chicago area.

Each appointment lasted approximately two and one-half hours. In one room the medical student was given first the Biographical Inventory (SA), followed by the Idealism-Cynicism Inventory (CI), and

then the two-page questionnaire. He was then asked to enter an adjoining room for the interview. He was offered a comfortable living room chair. Each interview was conducted as leisurely as possible. At the completion of the interview, the Medical Student Attitude Inventory (IPA) was administered. The writer thanked the medical student for his cooperation and wished him success in his chosen career. The Biographical Inventory (SA), the Idealism-Cynicism Inventory (CI), and the Medical Student Attitude Inventory (IPA) which were repeated at the two remaining six-month intervals, lasted approximately forty-five minutes for each medical student.

The data pertaining to all variables were programmed for the utilization of the 1401 and 1620 IBM electronic computers. The variables were social class (SC), average grade in college (AGC), the average score for each respondent on the Medical College Admission Test (MCAT), the score obtained by each medical student on the four sub-tests of the MCAT, quantitative ability (S_1), verbal ability (S_2), general information (S_3), science (S_4). Other variables were stress-anxiety responses (SA), cynicism-idealism (CI), academic achievement (first year) at medical school (AA), and the internalization of professional attitudes (IPA).

Student's "t" statistic was utilized in this research to test the significance of means, standard errors, standard deviations,

the comparison of means from independent and dependent variables, the significance of differences between variables and probability. The chi-square test was also used in testing for statistical significance. The .05 level of significance was established as the point for the rejection of the null hypothesis. The analysis of variance was utilized on scores (verbal, quantitative, understanding society, and science) of the MCAT and social class differences (SC) of medical respondents in the sample.

Even though 75 (89.0 per cent) of the medical students were Catholic, drawn primarily from the Midwest and the school is under religious auspices, it is assumed that the students themselves, the elements in the selection process by the medical school, the the undergraduate preparation, the level of competence of the students,the fact of multiple applications by the students to different medical schools, the fact that the medical school receives approximately ten applicants for every student admitted, the common curricula requirements of medical education, all of these suggest that there is considerable assurance of typicality and randomness of student population in any case study of a given medical school.

Chapter III of this study examined some selected attitudes of the medical respondents toward medicine and medical education. The purpose was to obtain further insight into a more intensive understanding of the interrelationships of the variables and the

professionalization process of these students explored in chapters IV, V, and VI, respectively.

An attempt was made to find out how medical students respond to the various topics in their interviews; their opinions on the use of psychological and psychiatric tests as regular part of the admissions procedure; their view of the value of the MCAT (Medical College Admission Test) etc.

In addition, an effort was made to ascertain their political and professional preferences; whether or not medical students from the lower classes experience more difficulty and/or less desire to become members of a fraternity. Attitudes with regard to factors influencing their judgment as to a patient being a person are explored. Their sources of income, annual expenses, expected gross annual income are also analyzed. Finally, their motives for studying medicine are questioned.

The findings reported in this chapter tended to indicate that pre-clinical medical students seem to show considerable concern about the selection procedures. Students were more favorably disposed to psychiatric tests than to psychological tests, such as the MCAT, as a regular part of the admissions procedure. In general, the student (once admitted) is inclined to be favorably disposed to the selection process.

A commitment to a political party by the medical student was in part due to parental influences. Students were opposed to the

introduction of socialized medicine into the United States. They were favorably disposed to the AMA because of the association's attempt to block any form of socialized medicine creeping into the present practive of American medicine.

Social class position was seemingly not an impediment for pre-clinical students to become members of a fraternity. In an informal setting, such as a fraternity milieu, the strains and pressures encountered by the pre-clinical student of medicine are most apparent. The way he speaks, the type of language he uses, the things he does, indicate to the participant observer that the pre-clinical years of medical school are indeed a "training for uncertainty."

As for the reasons for choosing the medical profession, human service and prestige are given as most important factors. Students asserted that they preferred a teacher with an M. D. degree rather than a Ph. D. degree during the pre-clinical years of medical school. "Over-specialization" seemed to make the pre-clinical professor with a Ph. D. a "poor teacher" in the mind of the medical student.

The strains and pressures of the pre-clinical years of medicine seem to be intensified in an informal setting such as a fraternity house, due to the role-playing, and the role-expectations of clinical students interacting with first and second year medical students. At times, an informal setting appears to aid the student in his professionalization process, at other times,

to strain and, to some degree, to disrupt the socialization continuum of the pre-clinical medical student. If the disruption prevails to any marked degree, the possibilities are that the pre-clinical student becomes confused, bewildered, perplexed. As a result, the student's self-doubts as to his intellectual adequacy increases. He tends to assume that his own intellectual inadequacies are far greater than the study of medicine will allow.

Among the various subjects presented in the freshman year, physiology appears to be most interesting. Greater interest in this discipline among freshmen is apparently related to future studies and the need to have a thorough grasp of body functions.

In general, freshmen did not read the medical journals. Inability to comprehend the scholarly articles and the great amount of work in the pre-clinical years of medicine were reported as reasons.

Professional satisfaction was prized rather highly both in the choices of a particular branch of medicine interested in and the specialization preferences envisaged by students in the sample. At this early stage, the association between interest in a particular branch of medicine and occupational preferences was most commonly found by students who intended to be general practitioners. An essential aspect of the students' estimates concerning general practice was the problem of competition in the various specialities of medicine and the difficulty of obtaining higher qualifications both for research and teaching.

The mean yearly expenditure for married students in the sample was $3,500.00, including $1,250 tuition. For single students it was $2,130.00. Parents represent one of the two largest single sources of income, but, on the average, they supply less than half of what is spent by the single student, and less than a third of what the married respondents require.

In terms of seven selected factors influencing the student's judgment that a patient is a person, it is noted that "the same educational level" was the most important factor for all students irrespective of social class position. The items of least importance were varied by social class position of medical respondents in the sample. Class I students asserted that "the same race" was not an important factor. Class II and III students reported that "knowledge about his country" and "his ability to speak the English language" were not essential as influencing factors of their judgment that the patient is a "person like themselves."

Chapter IV reported the findings on the hypothesized association between social class and academic achievement in medical school.

As indicated in Chapter II, the medical students used for testing this hypothesis were first divided into five social classes on the basis of their fathers' education and occupation. The number of cases in Class II and Class V was too small to allow for statistical analysis of the association between social

class and academic achievement in medical school. It was then decided to combine Class I and Class II into a single category (I) and Class IV and Class V into another (III).

The hypothesis that academic achievement at medical school is significantly influenced by class membership is not supported by the data of the research.

While the data of this study do not provide evidence of a positive relationship between social class and medical school achievement, these data alone do not confirm the null hypothesis that social class does not significantly influence a person's chances for high academic achievement in the first year of medical school. Those observed class similarities in academic achievement (in the first year of medical school) confirms the high intellectual abilities of all, as established by the fact of admission to medical studies. Thus, there was need for further analysis to make sure that the acceptance of the null hypothesis (and hence the rejection of the hypothesized association between class and academic achievement in medical school) was a function of intellectual ability, medical aptitude, and undergraduate performance. Accordingly, a possible association between academic achievement in the first year of medical school and scores on the MCAT and the AGC was measured to see whether social class is related to medical school achievement over and beyond these two measures of potential for medical school work.

In brief, the findings reported in Chapter IV have tended to indicate that:

1) Academic achievement (AA) at medical school (Freshman year) is not significantly related to social class position (SC).

2) Observed class similarities in academic achievement (in the first year of medical school) confirms the high intellectual abilities of all, as established by the fact of admission to medical studies.

3) Average grade in college (AGC) of medical respondents in the sample is not significantly related either to social position (SC) or academic achievement (AA) in the first year of medical school.

4) Social class position (SC) is not significantly related either to the medical student's average score on the MCAT, verbal ability (S_1), quantitative ability (S_2), general information (S_3), or to science (S_4).

5) Academic achievement (AA) at medical school is not significantly related to average scores on the MCAT irrespective of SC.

6) Academic achievement (AA) at medical school is not significantly related either to a student's score on verbal ability (S_1) of the MCAT, quantitative ability (S_2), general information (S_3) or science (S_4).

7) There is a negative relationship between the ACC and the MCAT of medical respondents in the sample irrespective of SC.

8) There is a negative relationship of ACC, MCAT, and AA of medical students in the sample irrespective of SC.

9) The analysis of variance indicates:

   a) Irrespective of social class position (SC), medical students' abilities in the sample do not have any significant relationship to the scores obtained by them and

   b) The MCAT in itself does not have any significant relationship to scores obtained by medical respondents in the sample with the exception of Class II students ($F_{4,\ 12}=18.9$; p .05).

10) An investigation on each test score of the MCAT by social class membership and the national average score on S_1, S_2, S_3, and S_4 indicates:

   a) Twelve of 20 (60.0 per cent) students in Class I and 21 of 33 (63.3 per cent) of the medical respondents in Class III scored above the national average in verbal ability (S_1) in contrast to Class II students of whom 14 of 29 (48.3 per cent) scored above the national average.

   b) In terms of quantitative ability (S_2) 9 of 20 (45.0 per cent) of medical respondents in Class I and

12 of 29 (41.4 per cent) in Class II scored above the national average score.

c) For general information (S_3) medical students, irrespective of social class position, scored below the national average.

d) The reverse results are obtained in terms of science (S_4); medical students irrespective of social class position (SC) scored above the national average. (This suggests that perhaps greater weight was given to this for admission.)

Chapter V reported the findings on the hypothesized associations between social class (SC) and stress-anxiety responses (SA), cynicism-idealism (CI) and the internalization of professional attitudes (IPA) of medical respondents in the sample. It also investigated the empirical question in terms of whether or not AA is significantly related to SA, CI, and IPA.

In brief, the findings reported in Chapter V of this dissertation have tended to indicate that:

1) Stress-anxiety responses (SA) at medical school are not significantly related to social class position (SC) durint the pre-clinical years of medicine.

2) In period I medical students in Class I and III fall in similar SA levels in contrast to Class II respondents whose SA level is lower.

3) In period II Class I respondents show a greater degree of SA in relation to Class II and III students whose SA levels are somewhat similar and lower.

4) In period III Class II students show lower SA levels in contrast to Class I and III respondents whose SA levels appear to be somewhat equal.

5) Class I students experience a gradual decrease of SA over 3 periods; for Class II students there is virtually no change of SA in Periods I and II but a slight change in Period III; for Class III respondents there is a marked decrease of SA during Period II and III in contrast to Period I.

6) A medical student's academic achievement (AA) is not significantly related to his stress-anxiety (SA) responses during the pre-clinical years of medical school.

7) Cynicism-idealism (CI) at medical school is not significantly related to social class position (SC) during the pre-clinical years of medicine.

8) In Period I medical students in Class I and II fall in similar CI levels in contrast to Class III respondents whose CI level is lower.

9) In Period II Class I students show a higher CI level in contrast to Class II and III respondents whose CI levels are somewhat similar and lower.

10) In Period III Class II students show a higher CI level in contrast to Class I and III respondents whose CI levels appear to be about the same.

11) Class I students seem to experience a gradual increase in idealism in Period II and a decrease in idealism (consequently an increase in cynicism) in Period III.

12) Class II respondents exemplify a gradual increase of idealism in Period II and a slight decrease of idealism (consequently a slight increase of cynicism) in Period III.

13) Changes in CI for Class III students (as compared with upper and middle-class students) are obtained when a comparison is made among scores of Periods, II and III with the exception that there is a sharp decrease of idealism (consequently an increase of cynicism) between Periods II and III.

14) A medical student's academic achievement (AA) is not significantly related to scores obtained on the Cynicism-Idealism Inventory during the pre-clinical years of Medicine.

15) The internalization of professional attitudes (IPA) during the pre-clinical years of medicine is not significantly related to social class (SC).

16) Medical students in Class I and III show somewhat similar IPA levels in contrast to Class II students

17) In Period II all three Classes (I, II, and III) exemplify similar IPA levels which are increased.

18) In Period III Class II students register higher IPA levels in contrast to Class I and III respondents whose IPA levels appear to be somewhat lower and similar.

19) Class I medical students first show a gradual increase in IPA in Period II and a sharp decrease in IPA in Period III.

20) IPA scores for Class I respondents in Periods I and III appear to be somewhat similar in contrast to IPA scores in Period II which are higher.

21) Class II respondents have a gradual increase in IPA in Period II and a slight decrease in IPA in Period III. IPA scores for Class II students in Periods II and III appear to be somewhat similar in contrast to IPA scores in Period I.

22) Slight changes of IPA for Class III respondents are obtained when a comparison is made among scores of Periods I, II, and III with the exception that there is a sharp decrease of IPA between Periods II and III.

23) A medical student's academic achievement (AA) is not directly related to his internalization of professional attitudes (IPA) during the pre-clinical years of medicine.

Chapter VI reported the findings on the relationship between stress-anxiety (SC) responses, cynicism-idealism (CI), and the internalization of professionalization attitudes (IPA). It also further investigated the professionalization process of medical students in the sample as they moved through successive phases of a status-sequence during their pre-clinical years of medical school.

In brief, the findings reported in Chapter VI of this research have tended to indicate that:

1) Stress-anxiety responses (SA) at medical school are significantly related to cynicism-idealism (CI) of medical respondents during the pre-clinical years of medicine.
2) The positive statistical relationship between SA and CI levels during Periods I, II, and III could be construed as an empirical confirmation of Becker's proposition that "the very notions 'idealism' and 'cynicism' must be seen as situational in their expressions rather than as stable traits possessed by individuals in greater or lesser degree."[4]
3) In Periods I and II, I and III there is a negative statistical relationship between SA and IPA levels of medical respondents in the sample.

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[4]Becker and Geer, "The Fate of Idealism in Medical School," op. cit., pp. 50-56.

4) In Periods II and III stress-anxiety responses (SA) of students are significantly related to scores obtained on the Medical Student Attitude Inventory (basis for IPA).

5) A partial explanation of the above relationship of SA and IPA in Periods II and III may be due to the magnitude of the intellectual, psychological and emotional demands made upon the student during his sophomore year of medical school. Thus, as SA increases there are corresponding increases in IPA.

6) Cynicism-idealism (CI) responses are not significantly related to the internalization of professional attitudes (IPA) of medical respondents during the pre-clinical years of medicine.

7) Students, by the mere fact that they are within a particular social class, do not necessarily experience greater difficulty than others in the internalization of the professional attitudes and values (IPA) of medicine, assuming academic achievement to be constant from a statistical perspective.

8) Results have previously demonstrated that academic achievement (AA) in medical school is not directly related to the internalization of professional attitudes (IPA) of medical respondents in the sample.

9) From an operational point of view, it is noted that although the fluctuations of stress-anxiety responses (SA)

in Periods I, II, and III among respondents of different social class backgrounds are not statistically significant, these responses are significantly related to the internalization of professional attitudes (IPA) of medical students in Periods II and III.

10) Further, from the viewpoint of the professionalization process, the findings of the study in terms of cynicism-idealism (CI) and the internalization of professional attitudes (IPA) suggest that although there are differences of scores in Periods I, II, and III among respondents of the three social classes, CI scores are not significantly related to the IPA of medical students in the sample.

Hypotheses Confirmed or Rejected and Relevance to Theory.--The four major hypotheses of the study as to measures utilized would be rejected. No significant statistical relationships were found between social class as independent variable and the following four dependent variables: AA, SA, CI, and IPA.

Social Class.--The findings of this study tend to show that social class position (SC) of the three social class groupings are compatible with the adoption of the professional role of the physician. Medical school faculties need not screen a medical applicant on the basis of his social class. While medical school applicants obviously require intensive assessment to discover whether or not they have the ability to meet the intellectual demands of medical

training, it appears that neither the MCAT nor the previous college performance (AGC) is indicative of success in the first year of the medical school curriculum. Since many medical schools are involved in the searching analysis of their admittance and educational programs, it seems incumbent upon their faculties to study ever more critically the MCAT and the AGC of medical applicants. Incidentally, it seems that higher intelligence and greater scientific knowledge propel lower class students in the sample of this study. Scores on "general information" of the MCAT were strikingly lower for the middle-class than the others--suggesting middle-class philistinism.

Thus far, the results of this study have suggested that lower social class background of a medical student should not be even subtly a disqualifying factor for a candidate to medical school. Since the representatives of the three social classes covered in the study came from predominantly white, Catholic, urban settings, nothing can be said at this point about whether or not this relationship will hold for all regions and sub-cultures. Further research is needed to explore the degree to which the finding here holds true for all such variables.

Stress-Anxiety.--Although the four basic hypotheses of the study showed no confirmation, there seems to be a set of attitudes and values which appear to be critical for the selection procedures of medical applicants and their adjustment to the total environment of

the sub-culture of the medical school.

An investigation of the interrelationships of the variables seemed to indicate a positive significant relationship between SA and CI (if taken over the 18 month span--Periods I to III), and SA and IPA between Periods II and III.

It would appear that the greater the level of stress and anxiety of the medical student, the more likely he is to reflect idealistic attitudes; and the lower the level of stress and anxiety, the more likely the student will reflect cynical attitudes toward the medical profession.

Another possible explanation, which does not necessarily preclude the previous one, is that the more secure (low SA) the medical student perceives himself to be, the less likely would he be amenable to any basic changes in his own attitudes and the more likely he would mirror more cynical attitudes. Conversely, the less secure (high SA) the student perceives himself to be, the greater is his need to incorporate idealistic attitudes to help him adopt a more positive and professional role.

It would seem that a relatively secure (low SA) medical student would be less amenable to the socialization process and to the restructuring of his attitudes in the direction which medical schools would deem most appropriate. The less secure (high SA) a student is (provided that he can meet the academic demands of the medical training), the more likely he will adopt a set of professional attitudes which medical schools consider valuable.

The above findings are not to be interpreted to mean that a physician must be ill in order to get his patients well. It is quite likely that extremely high SA scores may indicate an anxiety level which is disabling and dysfunctional and further research can establish the optimal limits of anxiety, or conversely, optimal limits of security which will enable the candidate to achieve maximum socialization into the total sub-culture of the medical world.

The intensification of SA and IPA in Periods II and III might suggest that they are latent changes which are actualized over time in the professionalization process during the pre-clinical years of medical school. These changes do not become manifest in time between Periods I and II.

It also seems that the situational explanation takes precedence if one observes the way in which latent anxiety emerges over time to affect both CI and IPA. SA affects one's attitudes and the socialization process. Perhaps the opposite is also true. Lack of socialization makes manifest this hidden anxiety, or both the SA and the socialization process tend to affect the attitudes of the medical student in the pre-clinical years of medicine. Further research is necessary to explore the degree of the socialization process in relation to SA and vice versa.

Thus far, this aspect of the research tends to indicate that the more secure the medical candidate, as measured by low anxiety on the SA scale, the less the likelihood he will internalize the

professional attitudes of medicine; the less secure he is, the greater the likelihood he will take on the professional attitudes required. These findings suggest a complementary relationship between SA and the socialization process, and are somewhat in line with Kurt Lewin's theory of adolescence.[5] With Lewin the greater our need, the higher the valence of the object (becoming a physician), and taking on the objects of becoming a physician would mean more to a medical student with higher anxiety level than it would to a relatively secure student. From an anthropological perspective, Linton[6] would assert that one's needs are crucial to the socialization process and an individual becomes socialized in the direction of those groups, institutions that best satisfy those needs. From a sociological standpoint, the implications of the socialization process have been well documented by Becker,[7] Merton,[8] Leonard Reissman,[9] Bloom[10] and others.

It would appear, therefore, that the interaction of personalities and the available norms within the medical school environment

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[5]Rolf E. Muuss, Theories of Adolescence (New York: Random House, 1962), pp. 82-93.

[6]Ralf Linton, The Cultural Background of Personality (New York: Appleton-Century-Crofts, Inc., 1945).

[7]Becker, op. cit.

[8]Merton, op. cit.

[9]Reisaman, op. cit.

[10]Bloom, op. cit.

explain the changes of attitudes in the professionalization process of the pre-clinical student. It is not the social class background of the medical student, his average grade in college, his scores on the MCAT, or his academic achievement in the first year of medical school that bring about these changes in attitudes.

This aspect of the research might prove to be of some value to medical school faculties from the standpoint of selection and training of medical students. The medical schools may hopefully turn out persons who possess over and above the necessary skills to practice the art of medicine--persons who will have the total armamentations of the physician, able to incorporate all of the roles, norms and values of the medical profession.

Implications for Future Research.--There are a number of strictly empirical inquiries that would throw light on various aspects of the questions advanced at different points in the dissertation and would allow for more decisive testing and interpretation of the relationships among social class (SC), average grade in college (AGC), the Medical College Admissions Test (MCAT), the four subtests of the MCAT (S_1, S_2, S_3, S_4), academic achievement in medical school (AA), stress-anxiety responses (SA), cynicism-idealism (CI) and the internalization of professional attitudes (IPA). Some of the empirical questions to be investigated during the clinical years of medical respondents in the sample are:

1) Is the evidence of stress and anxiety related to academic achievement during the clinical years of medical school, and if so, is this level of stress associated with social class?

2) Are clinical medical students from families of upper class background more often found at higher levels of academic achievement than students from families of lower and lower-middle class background?

3) Because of previous socialization, does the internalization of professional attitudes of medical students from the upper classes tend to be easier than for medical students from the lower classes?

4) Do clinical medical students from families of lower-middle and lower class background tend to express a relatively high degree of cynicism and a relatively low degree of idealism in contrast to medical students from families of upper class background?

5) Is academic achievement during the clinical years of medicine related to a student's cynicism-idealism responses?

6) Is academic achievement significantly related to the internalization of the attitudes and values of medicine?

7) Are stress-anxiety responses of a clinical student significantly related to his scores on the Cynicism-Idealism Inventory?

8) Do stress-anxiety responses of a clinical medical student significantly related to his internalization of the professional attitudes and values of medicine?

9) Do cynicism-idealism responses of a clinical medical student significantly related to his internalization of the professional attitudes and values of medicine?

10) Is the average grade in college of a medical student reflective of his performance during the clinical years of medicine?

11) Is the average grade on the MCAT of a medical student reflective of his performance during the clinical years of medicine?

12) Is the verbal ability score of the MCAT of a medical student reflective of his performance during the clinical years of medicine?

13) Is the quantitative ability score on the MCAT of a medical student reflective of his performance during the clinical years of medicine?

14) Is the understanding of modern society score on the MCAT of a medical student reflective of his performance during the clinical years of medicine?

15) Is the science score on the MCAT of a medical student reflective of his performance during the clinical years of medicine?

Apropos of the above questions, the research techniques and instruments utilized in this study could be applied in other disciplines related to the medical profession. Thus, it might be illuminating not only to compare the results of this study with other medical schools both on the national and international levels, but to examine whether or not there are similarities and/or dissimilarities in terms of social class position, average grade in college, entrance examinations, cynicism-idealism, the internalization of professional attitudes and values in professions such as dentistry, law, etc.

Conclusion.--The medical student of today cannot be understood apart from the institutional setting of the medical school which transmits and advances the culture of medicine. It has been rightly asserted that "it is the task of the medical school to shape the novice into the effective practitioner of medicine, to give him the best available knowledge and skills, and to provide him with a professional identity so that he comes to think, act, and feel like a physician."[11]

And:

> It is the problem of the medical school to enable the medical man to live up to the expectations of the

[11] Merton et al., pp. 7-8.

> professional role long after he has left the sustaining value-environment provided by the medical school. This is the context within which psychological and sociological inquiry into medical schools can identify the extent to which this comes about and the ways in which it comes about.[12]

This exploratory and descriptive study, though limited, represents a somewhat crucial encounter because the student is becoming involved with one of the most profound and learned professions man has ever envisioned--a profession that comes to grips with the study of man at his most human moment. The eighty-two medical respondents in this sample will hopefully enter into that select group of men and women who enjoy the privileges and bear the burdens of the medical profession.

Additionally, from an operational point of view, this study involves eighty-two potential men and women of medicine, whose future daily work will call for an unusual blending of charity and wisdom, whose tasks may range from the simple note of patience, kindness or understanding to the complexities of machines capable of undertaking some of nature's most elaborate and complicated processes. Some of these future M. D.'s will sit by the bedside, others will perform tasks peering into a chemical battleground at enemies who are often less than 1/500,000 of an inch in diameter.[13]

Some may occupy important posts as teachers and administrators in the nation's medical schools, hospitals in the U. S. and

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[12] Ibid.

[13] "A Story of People With Ideas," The Loyola Report (Spring, 1964), p. 1.

overseas, and other health agencies. Whatever their tasks may be in the future, whether as teachers, researchers, or practitioners, it is hoped by this researcher that the potential physicians in this study will come to grips with the idea that they have an opportunity to care for the patient in the broadest biological, sociological, psychological, and moral perspective.[14]

Medicine, therefore, becomes not just episodic, carrying a patient through the panorama of life and death and every moment in between; it becomes more meaningful, for it is part of the best traditions of the liberal arts and humanities. Medicine practiced under these conditions permits the physician to heal the mind and body--the whole person.[15]

As a kind of epilogue to this study the writer wishes to conclude with a statement from the President of Loyola University:

> If a physician is to be considered properly educated, he must have the conviction that his patient is much more than a biological specimen--in his treatment of a patient he must consider the "whole man."[16]

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[14] Ibid.

[15] Ibid.

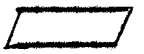
[16] Ibid., p. 22.

APPENDIX A

STRUCTURED INTERVIEW SCHEDULE

NUMBER_____

DATE INTERVIEWED_____

CODED 

THIS IS A CONFIDENTIAL INTERVIEW.

1. Name: _____ 1._____

2. Home Address: _____ 2._____

3. Race: 3._____

   a. Caucasoid ( )

   b. Negroid ( )

   c. Mongoloid ( )

4. Nativity: 4._____

   a. Native ( )

   b. Foreign ( )

5. Marital Status: 5._____

   a. Single ( )

   b. Married ( )

   c. Widowed ( )

   d. Divorced ( )

   e. Separated ( )

6. Sex: 6._____

   a. Male ( )

   b. Female ( )

7. Age: 7._____

a. 20-24 ( )

b. 25-29 ( )

c. 30-34 ( )

d. 35-39 ( )

e. 40 and over( )

8. Length of Marriage: (Married Students Only) 8._____

a. 1 year ( )

b. 2 years ( )

c. 3 years ( )

d. 4 years ( )

e. 5 and over( )

9. How old were you when you were married? _____ 9._____

10. Number of Siblings: (Brothers and Sisters) 10._____

a. None ( )

b. One ( )

c. Two ( )

d. Three ( )

e. Four or more ( )

11. Position Among Siblings: (Brothers and Sisters) 11._____

a. Oldest ( )

b. Youngest ( )

c. Neither youngest nor oldest ( ) Specific_____

d. Only child ( )

12. Any Sisters or Brothers who are M.D.'s? 12._____

a. None ( )

b. One ( )

c. Two or more ( )

13. Age and Educational Attainment of Brothers and Sisters:

13._____

Sex	Age	Year of School	Still in School?
____	____	_____	Yes ( ) No ( )
____	____	_____	Yes ( ) No ( )
____	____	_____	Yes ( ) No ( )
____	____	_____	Yes ( ) No ( )
____	____	_____	Yes ( ) No ( )
____	____	_____	Yes ( ) No ( )

14. What is your parent's nationality descent? 14._____

	Father	Mother
a. German-German	( )	( )
b. Irish-Irish	( )	( )
c. Polish-Polish	( )	( )
d. African-African	( )	( )
e. Chinese-Chinese	( )	( )
f. Japanese-Japanese	( )	( )
g. German-Irish	( )	( )
h. Irish-other	( )	( )
i. Polish-other	( )	( )
j. Both-other (Specify)_____	( )	( )_____

15. What is your father's occupation? 15.____

a. Professional ( )

- Medical ( )
- Dental ( )
- Related to medical (e.g., Veterinary) ( )
- College professor ( )
- Teacher, below college level ( )
- Clergy ( )
- Lawyer ( )
- Engineer ( )
- Other professional ( ) specify____

b. Manager, official, proprietor ( )

- Proprietor ( )
- Manager ( )
- Official ( ) specify____

c. Semi-professional and technical ( ) specify____

d. Clerical ( ) specify____

e. Sales ( ) specify____

f. Craftsman ( ) specify____

g. Foreman ( ) specify____

h. Operative ( ) specify____

i. Laborer ( ) specify____

j. Service worker ( ) specify____

k. Farm Laborer ( ) specify____

l. Deceased ( )

m. Retired ( )

n. Unemployed (regular occupation) ( ) specify____

o. Other ( ) specify____

p. No response ( )

16. Does your mother work? 16._____

a. Full time ( )
b. Part time ( )
c. No ( )

17. If "yes," what is your mother's occupation? 17._____

a. Professional ( )

Medical ( )
Related to medical (e.g., Veterinary) ( )
College professor ( )
Teacher, below college level ( )
Lawyer ( )
Other Professional ( ) specify_____

b. Manager, official, proprietor

Proprietor ( )
Manager ( )
Offical ( ) specify_____

c. Semi-professional and Technical ( ) specify_____

d. Clerical ( ) specify_____

e. Sales ( ) specify_____

f. Service worker ( ) specify_____

g. Homemaker ( )

h. Other ( ) specify_____

i. Deceased ( )

j. Retired ( )

18. How many years education completed by your father? 18.____

a. Elementary: 1 2 3 4 5 6 7 8

b. High school: 1 2 3 4

c. College: 1 2 3 4

d. Graduate or Professional: 1 2 3 4 5 6 7 8

e. Other type of education (please specify)_____

f. Do not know _____

19. If he went to high school, what kind of course did your father follow? 19.____

a. Academic (college preparation) course _____

b. Technical (trade or vocational) course _____

c. Business (typing, bookkeeping, etc.) course _____

d. Other (specify) _____

e. Do not know _____

20. If your father attended college, do you know his major subjects? 20.____

a. _____

b. _____

c. _____

d. Do not know _____

21. Does your father hold any college or university degrees? 21.____

a. Yes _____

b. No _____

If "yes" Degree _____ Major field of study _____

22. What was the extent of your father's Catholic Education?

22.____

a. Elementary: None ( ) Number of complete years____

b. High school: None ( ) Number of complete years____

c. College: None ( ) Number of complete years____

d. Graduate or Professional: None ( ) Number of complete years____

e. Other type of education (specify)

_____ None ( ) Number of complete years____

f. Do not know: ____

23. What was the formal education completed by your mother?

23.____

a. Elementary: 1 2 3 4 5 6 7 8

b. High school: 1 2 3 4

c. College: 1 2 3 4

d. Graduate or Professional: 1 2 3 4 5 6 7 8

e. Other type of education (specify) _____

f. Do not know: ____

24. If she went to high school, what kind of course did your mother follow?

24.____

a. Academic (college preparation) course ____

b. Technical (trade or vocational) course ____

c. Business (typing, bookkeeping, etc.) course____

d. Other (specify) ____

e. Do not know: ____

25. If your mother attended college, do you know her major subject(s)? 25.____

a. _____

b. _____

c. _____

d. Do not know: _____

26. Does your mother hold any college or university degrees? 26.____

a. Yes _____

b. No _____

If "yes"	Degree	Major field of study
	_____	_____
	_____	_____
	_____	_____

27. What was the extent of your mother's Catholic education? 27.____

a. Elementary: None ( ) Number of complete years _____

b. High school: None ( ) Number of complete years _____

c. College: None ( ) Number of complete years _____

d. Graduate or professional: None ( ) Number of complete years _____

e. Other type of education

_____ None ( ) Number of complete years _____

f. Do not know: _____

28. Does your father have a religion? 28.____

a. Yes _____

b. No _____

If "yes"

a. Catholic ( )

b. Protestant ( ) please specify _____

c. Jewish ( )

d. Other ( ) please specify _____

e. No response ( )

29. What is your mother's religion? 29.____

a. Catholic ( )

b. Protestant ( ) please specify _____

c. Jewish ( )

d. Other ( ) please specify _____

e. None ( )

f. Do not know ( )

g. No response ( )

30. What is your religion? 30.____

a. Catholic ( )

b. Protestant ( ) please specify _____

c. Jewish ( )

d. Other ( ) please specify _____

e. None ( )

f. No response ( )

31. Please inform me of your previous formal education. 31.____

a. Elementary: 1 2 3 4 5 6 7 8

b. High school: 1 2 3 4

c. College: 1 2 3 4

d. Graduate or professional: 1 2 3 4 5 6 7 8

e. Other type of education (specify) 1 2 3 4 5 6 7 8_____

32. In High school, what kind of course did you follow? 32.____

a. Academic (college preparation) course _____

b. Technical (trade or vocational) course _____

c. Business (typing, bookkeeping, etc.) course _____

d. Other (specify) _____

33. What was your undergraduate major subject(s) in college? 33.____

a. Biological Science ( )
b. Chemistry ( )
c. Premedical ( )
d. Zoology ( )
e. Languages ( )
f. Humanities ( )
g. Sociology ( )
h. Social Sciences except Sociology ( )
i. Physical sciences except Chemistry ( )
j. Mathematics ( )
k. Other (specify) _____ ( )
l. No response ( )

34. Do you hold any college or university degrees? (American or foreign) 34.____

a. Yes _____

b. No _____

If "yes"

Degree	Major field of study
_____	_____
_____	_____

35. Have you had any Catholic education? 35.____

a. Elementary: None ( ) Number of complete years _____

b. High school: None ( ) Number of complete years _____

c. College: None ( ) Number of complete years _____

d. Graduate or professional None ( ) Number of complete years____

e. Other type of education (specify)

_____ None ( ) Number of complete years_____

36. What is the name(s) of your premedical college(s)? 36.____

a._____

b._____

37. Where is it located? 37.____

_____

_____

_____

38. College location compared to medical school: 38.____

a. Same institution ( )

b. Same state ( )

c. Different state (specify) ( ) _____

d. No response ( )

39. What kind of community have you lived most of your life in? 39.____

a. A large city (over 100,000 pop.) ( )

b. The suburb of a large city (specify) ( ) sub.__city__

c. A small city (10,000 to 100,000 pop.) ( )

d. A town (2,500 to 10,000 pop.) ( )

e. A small town (under 2,500 pop.) ( )

f. The country, but family received income from work in town ( )

g. The country, family owned the ranch or farm it operated ( )

h. The country, on rented or tenant farm or ranch ( )

i. No response ( )

40. What are your major hobbies? 40.____

a. _____

b. _____

c. _____

d. _____

41. What was your undergraduate extra-curricular activity(ies)? 41.____

a. Special interest group--e.g, science, language clubs (specify)_____ ( )

b. Athletics--varsity or intramural ( )

c. Social fraternity ( )

d. Honorary and professional societies or fraternities, e.g,, Phi Beta Kappa (specify)_____ ( )

e. Student government ( )

f. Religious organization (specify)_____ ( )

g. Music--e.g., band, choir, orchestra (specify)_____ ( )

h. Journalism ( )

i. Job (specify)_____ ( )

j. Others (specify)_____ ( )

k. No response ( )

42. How many medical schools did you apply to? 42.____

_____ _____ _____

43. How many Catholic medical schools did you apply to? 43.____

_____ _____ _____

44. Did you apply to any foreign medical school(s)? 44.____

Yes_____ No_____

If "yes," what is the name of the foreign medical school, and where is it located?

a. Name_____

b. Location_____

45. If "yes," what are some of the reasons for your applying to a foreign medical school? 45._____

a._____
b._____
c._____
d._____

46. In your mind how did you rank Loyola Medical School School when you made application? 46._____

a. First choice ( )
b. Second choice ( )
c. Third choice ( )
d. Fourth choice ( )
e. Fifth choice or lower ( )
f. No response ( )

47. If you had applied to a foreign medical school, were you accepted? 47._____

a. Yes_____ b._____

48. If "yes," what are some of your reasons for not attending a foreign medical school? 48._____

_____
_____
_____

49. If you did not make Loyola your first choice and yet accepted attendance here, why did you? 49._____

a. Conflicting dates of notification by medical schools. Had to make a binding commitment at another school before hearing from first choice. ( )
b. Fear of not being accepted by first choice ( )
c. Had such a strong desire to be accepted that first offer was accepted ( )
d. Ranked first and second choice schools almost equal, so it made little difference ( )
e. Accepted second choice school, then withdrew when admitted to first choice ( )

f. Almost accepted second choice school, heard from first before commitment was due ( )
g. Rejected by first choice, so accepted second ( )
h. Other_____ ( )
i. No response

50. What was the date of first acceptance to 1961 medical class? 50._____

a. Before January 1961 ( )
b. January-July 1961 ( )
c. August 1961 ( )
d. September 1961 ( )
e. October 1961 ( )
f. November 1961 ( )
g. December 1961 ( )
h. January 1962 ( )
i. February 1962 ( )
j. March 1962 ( )
k. April 1962 ( )
l. May 1962 ( )
m. June 1962 ( )
n. July 1962 ( )
o. August 1962 ( )
p. September 1962 ( )

51. What were the required dates for binding commitments for medical schools to which you applied? 51._____

a. _____
b. _____
c. _____
d. Do not know _____

52. In college, did you major in your field of greatest interest? 52._____

Yes_____ No_____ Not sure_____

53. If "no," what were the influencing factors in selection of a preferred undergraduate major? 53._____

	Much	Some	None	No response
a. Advice of college adviser	( )	( )	( )	( )

	Much	Some	None	No response
b. Thought it would enhance chances of getting into medical school	( )	( )	( )	( )
c. Advice of major professor	( )	( )	( )	( )
d. Advice of a medical school	( )	( )	( )	( )
e. Advice of parents	( )	( )	( )	( )
f. Advice of family physician	( )	( )	( )	( )
g. Other (specify)_____	( )	( )	( )	( )
h. Do not know _____				

54. How many unrequired undergraduate courses were taken to aid admission to medical school? 54._____

a. None ( )
b. One ( )
c. Two ( )
d. Three or more ( )
e. Do not know ( )

55. What is your opinion of application procedures of the medical school you are now attending? 55._____

a. Very valuable ( )
b. Valuable ( )
c. Not valuable ( )
d. Not at all valuable ( )
e. Do not know ( )

56. What is your opinion of application procedures of other medical schools applied to? 56._____

a. Very valuable ( )
b. Valuable ( )
c. Not valuable ( )
d. Not at all valuable ( )
e. Do not know ( )

57. How would you rate the quality of the interviews you experienced? How many? _____ 57._____

a. Very valuable ( )
b. Valuable ( )
c. Not valuable ( )
d. Not at all valuable ( )
e. Do not know ( )

58. What is your opinion on the value of psychiatric interview as regular part of admissions procedure? 58.____

a. Very valuable ( )
b. Valuable ( )
c. Not valuable ( )
d. Not at all valuable ( )
e. Do not know ( )

59. What is your opinion on the value of psychological tests as regular part of admissions procedure? 59.____

a. Very valuable ( )
b. Valuable ( )
c. Not valuable ( )
d. Not at all valuable ( )
e. Do not know ( )

60. What is your opinion of the value of the MCAT (Medical College Aptitude Test)? 60.____

a. Very valuable ( )
b. Valuable ( )
c. Not valuable ( )
d. Not at all valuable ( )
e. Do not know ( )

61. Were these topics covered in your interview(s)? 61.____

a. Motives for wishing to study medicine ( )
b. Early development of applicant ( )
c. Knowledge of current events ( )
d. Ability of applicant to withstand stress ( )
e. Cultural interests ( )
f. Specific scientific interests ( )
g. Mental health ( )
h. Physical health ( )
i. Other (please specify)_____ ( )

62. Did you take psychological tests other than MCAT? 62.____

a. Other tests taken ( ) specify_____
b. Other tests not taken ( )
c. Do not know if other tests were taken ( )

63. Will you please comment on special problems concerning admission procedures? 63._____

Positive comments: _____

_____

_____

_____

Negative comments: _____

_____

_____

_____

_____

64. What are the sources of your income? 64._____

a. Earnings ( )
b. Family support ( )
c. Loans ( )
d. Scholarships ( )
e. Other (specify) ( )
_____
f. No response ( )

65. What are your approximate yearly expenses for the following? 65._____

	Single Persons	Marries Per.
a. Room and board	_____	_____
b. Medical and dental care	_____	_____
c. Recreation (including vacations)	_____	_____
d. Transportation	_____	_____
e. Clothing	_____	_____
f. Books	_____	_____
g. Instruments	_____	_____

66. Do you have any particular reason(s) for choosing the medical profession? 66._____

Yes_____ No_____

If "yes," what are some of the reasons?

_____

_____

_____

67. What subject(s) do you think are of most interest to you in your freshman year? 67._____

a._____
b._____
c._____

Why?_____

68. In terms of ability, how do you think you compare with medical students in general? 68._____

a. Favorable ( )
b. Unfavorable ( )

69. In terms of ability, how do you think you compare with your medical school classmates? 69._____

a. Favorable ( )
b. Unfavorable ( )

70. What particular branch of medicine would you be interested in? 70._____

71. After completing your internship, do you want to enter into: 71._____

a. General Practice ( )
b. Research ( )
c. Specilization ( )
d. Teaching ( )
e. Other (specify)_____( )

72. What do you understand by socialized medicine? 72._____

73. Are you in favor of socialized medicine for the United States

Yes_____ No_____ 73._____

Please explain:_____

74. Are you acquainted with the names of any medical journal(s)?

a. Yes ( )
b. No ( )

74._____

If "yes," please name some of the journals:

a._____
b._____
c._____

75. Do you read the New Physician? 75._____

a. Yes ( )
b. No ( )

76. Do you read The Journal of the American Medical Association?

a. Yes ( )
b. No ( )

76._____

77. If "no" when do you intend to start reading the medical journals?

77._____

a. Freshman year ( )
b. Sophomore year ( )
c. Junior year ( )
d. Senior year ( )
e. During internship ( )
f. During residency ( )
g. During practice ( )
h. Never ( )
i. Do not know ( )

78. Do you plan to take a residency after internship? 78._____

a. Yes ( )
b. No ( )

79. What part of the country would you wish to do your internship?

79._____

(city) (state)

a._____ _____ _____
b. Do not care ( )
c. No response ( )

If "a" why?_____

80. What type of hospital would you wish to do your internship?

a. Private ( )
b. Public ( )

80._____

Reasons for choice:_____

81. What is your opinion of the American Medical Association?

81._____

82. What is your political preference? 82._____

a. Republican ( )
b. Democrat ( )
c. Other ( ) specify_____
d. None ( )

If "a," "b," or "c," why?_____

83. What is your opinion of the American College of Surgeons?

83._____

84. Are you in favor or opposed to socialized medicine for the United States? 84._____

a. In favor ( )
b. Opposed ( )

Why?_____

85. Do you think the American Medical Association expresses the political views of American physicians? 85._____

86. What do you understand by the term "group practice"? 86._____

87. Are you in favor of "group practice" later in life? 87._____

a. Yes ( )
b. No ( )
c. Uncertain ( )

Please explain:_____

88. What do you understand by the term a "clinical case"? 88._____

89. What do you expect of your teachers during your freshmen year of medical school? 89._____

90. Is there any major division with regard to the four years of medical school? 90._____

a. Yes ( )
b. No ( )
c. Uncertain ( )

If "yes," please name the division(s): a._____
b._____

91. What do you understand by the term "clinical years" of medical school? 91._____

92. What do you understand by the "pre-clinical years" of medical school? 92._____

93. Do you anticipate any major differences between the "pre-clinical" and the "clinical" years of medical school?

a. Yes ( )
b. No ( )
c. Uncertain( )

If "yes," what are some of the differences:

a._____
b._____
c._____

Would you care to comment on the differences mentioned above?

94. Do you think that one can predict what type of physician a medical student will become from his pre-clinical work? 94._____

a. Yes ( )
b. No ( )
c. Uncertain ( )

Please explain:_____

95. Do you think that the medical student who does well in his pre-clinical years, will also do equally well in his clinical years? 95.____

a. Yes ( )
b. No ( )
c. Uncertain ( )

Please explain:_____

_____

_____

96. Is there any relationship between the "pre-clinical" and the "clinical" years of medical school? 96.____

a. Yes ( )
b. No ( )
c. Uncertain ( )

If "yes," what is the relationship(s)?_____

_____

_____

97. a) How many hours did you study per week in college?

b) How many hours per week are you now studying in medical school during your freshman year? 97.____

_____

98. Now that you are in medical school are you happy? 98.____

a. Yes ( )
b. No ( )
c. Uncertain ( )

Please explain:_____

_____

_____

99. Do you have any motivating factors that will keep you interested during your pre-clinical years of medical school? 99.____

a. Yes ( )
b. No ( )

c. Uncertain ( )

If "yes," please name them:_____

_____

_____

100. Do you think the first year of medical school is exciting and interesting? 100._____

a. Yes ( )
b. No ( )
c. Uncertain ( )

Please explain:_____

_____

_____

101. Do you intend to join a medical fraternity? 101._____

a. Yes ( )
b. No ( )
c. Uncertain ( )

If "a" or "b" reasons for your intention:_____

_____

_____

102. What do you expect from a medical fraternity? 102._____

_____

_____

_____

103. (For student living in medical fraternities) Why have you decided to live in a medical fraternity? 103._____

_____

_____

_____

104. Do you have any close friends in medical school? 104._____

a. Yes ( )
b. No ( )
c. Uncertain ( )

If "yes," who are they?_____

_____

_____

105. In what areas do you consider these people good friends in your: 105.____

a. Social life _____

b. Studies _____

c. In both _____

106. Do you prefer not to associate with some medical students? 106.____

a. Yes ( )
b. No ( )
c. Uncertain ( )

If "yes" why? _____

107. Are these students whom you do not care to associate with 107.____

a. Fraternity students ( )
b. Non-fraternity students ( )
c. Both ( )

108. How many parties do you attend per month? (parties sponsored by fraternities, medical organizations, nurses' associations, etc.) 108.____

109. What is your opinion of your medical school? 109.____

110. What is your opinion of the Medical Center in Illinois? 110.____

111. Would you regard the physical therapist as a professional person? 111.____

a. Yes ( )
b. No ( )
c. Uncertain ( )

If "a" or "b" please explain:_____

112. Do you intend to work on an outside job during your pre-clinical years in medical school? 112.____

a. Yes ( )
b. No ( )
c. Uncertain ( )

	Yes	No
If "yes": During school year		
Summer		

113. Why do you consider medicine to be a profession? 113.____

114. What is your opinion of group health plans where medical care is rendered for a prepaid sum and the physicians are usually paid a salary? 114.____

115. What is your opinion of compulsory health insurance? 115.____

116. Are there any international medical organizations which assist underdeveloped countries? 116.____

a. Yes ( )

b. No ( )
c. Uncertain ( )

If "yes can you name some:_____ _____
_____ _____

Where are the headquarters?_____ _____
_____ _____

Who are the founders? _____ _____

117. What is your opinion of international medical organizations such as MEDICO? 117.____

_____
_____
_____

118. Is there any branch of the United Nations which deals in medical assistance with regard to underveloped countries? 118.____

a. Yes ( )
b. No ( )
c. Uncertain ( )

If "yes," what is the name of the branch of the U.N. and its specific function(s)?

Name_____
Functions:
_____
_____
_____

119. What is your opinion of WHO? (World Health Organization) 119.____

_____
_____
_____

120. Please explain, identify or define the following: 120.____

a. President of the AMA_____
b. Clerkship_____
c. Externship_____

121. What do you understand by the term "fee-spliting"? 121.____

122. Among the various professions which do you think possesses the greatest prestige in the United States? 122.____

Why?

123. Would you wish to join one of the International Medical Organizations, such as MEDICO or WHO? 123.____

a. Yes ( )
b. No ( )
c. Uncertain ( )

If "a" or "b" would you care to state the reasons?

124. What are your reasons for attending a Catholic medical school? 124.____

125. What would you consider very important in obtaining satisfaction in your work as a future physician? 125.____

1. What were the influencing factors in selection of a medical school?

	Much	Some	None
a. General reputation of school	( )	( )	( )
b. Geographic location	( )	( )	( )
c. Contacts with medical students	( )	( )	( )
d. Estimated cost, tuition, etc.	( )	( )	( )
e. Advice of premedical adviser	( )	( )	( )
f. Study of school catalogs	( )	( )	( )
g. Advice of family physician	( )	( )	( )
h. Study of "Admission Requirements of American Medical Colleges"	( )	( )	( )
i. Advice of parents	( )	( )	( )
j. Advice of medical school alumni	( )	( )	( )
k. Other (specify)_____	( )	( )	( )

2. In treating a patient, how would rate the following items in influencing your judgment that he is a person like you?

	Important	Not Important	No Opinion
a. The same race	( )	( )	( )
b. The same social class	( )	( )	( )
c. The same educational level	( )	( )	( )
d. The same profession	( )	( )	( )
e. The same religion	( )	( )	( )
f. His ability to speak the English language	( )	( )	( )
g. From the same neighborhood	( )	( )	( )

3. Are there any factor(s) you would consider very important to you in obtaining satisfaction in your work as a medical student?

a. Yes ( )
b. No ( )
c. Uncertain ( )

4. Would you please rate the following factors in terms of importance to you.

	Important	Not Important	No Opinion
a. Diagnostic problems	( )	( )	( )
b. Contact with other other professional people	( )	( )	( )
c. Contact with patients and families over a considerable period of time	( )	( )	( )
d. Opportunity to specialize	( )	( )	( )
e. Opportunity to utilize skilled techniques	( )	( )	( )
f. Opportnities for research	( )	( )	( )
g. Gratitude of patients	( )	( )	( )
h. Status in the oommunity	( )	( )	( )
i. Help for patients	( )	( )	( )
j. Financial reward	( )	( )	( )
k. Other (Specify)	( )	( )	( )

5. After all his preparation, a physician should be able to have an annual gross income of _____ dollars.

APPENDIX C

THIS IS NOT A TEST. THERE ARE NO RIGHT OR WRONG ANSWERS. PLEASE GIVE YOUR FRANK, HONEST, AND SPONTANEOUS OPINIONS.

For those statements with which you agree please circle A (A); for those statements with which you disagree please circle D (D).

For those statements with which you agree please circle A (A): for those statements with which you disagree please circle D (D).*

A D 1. Money will not mean much to me in medical practice. T

A D 2. I primarily study for tests. F

A D 3. During my medical practice it will handicap me if I do not become a member of a private club. F

A D 4. Despite recent emphasis on treating a patient as a person in medical education, it is inevitable that he will be treated as a clinical case. F

A D 5. I would like to be a society doctor. F

A D 6. Most of the material I am now studying will probably be useless in my medical practice. F

A D 7. During my medical practice it will not mean much to me if I do not live in the suburbs. T

A D 8. An important advantage in being in a fraternity is that old tests are available in order to pass examinations. F

A D 9. When you come right down to it the medical profession is just another profession. F

A D 10. I do not feel disturbed if I do not pass a minor Test. F

A D 11. A successful physician should drive a large new model car in keeping with his high social position. F

A D 12. I recognize that I am in medical school primarily because I am satisfying the wishes of someone else. F

A D 13. It does not matter too much to me whether or not I get through medical school. F

A D 14. Being a member of a fashionable country club is almost a necessity for a successful physician. F

A D 15. Sometimes I feel as if I should quit medical school and attempt something else. F

A D 16. Medicine is of greater interest to me as an art (practice) rather than a science (research). F

A D 17. I really want to be a physician more than anything else in the world. T

A D 18. I would prefer not to be a full time instructor in medical school. F

A D 19. It would be better to have only MDs as instructors in medical school. F

A D 20. Medical organizations such as MEDICO and WHO do not interest me. F

A D 21. While some people in medical school talk about gaining intellectual satisfaction, in the demanding study required it seems to me that such study is more accurately called sheer work. F

A D 22. I am in the medical profession primarily to help others. T

A D 23. While participation in civic affairs by professional men is desirable, as a physician I shall probably not be able to make sufficient time to do so. F

A D 24. If an accident occurred on my way to school it would probably be better not to assist someone seriously injured on the spot for fear of legal liability. F

A D 25. I would prefer to be a practicing physician treating diseases rather than a research physician trying to identify the cause of diseases. F

A D 26. I would rather go to a non-teaching hospital than a teaching hospital for my internship because the former offers a better opportunity for staff position. F

A D 27. I feel I shall not go into general practice because it would not permit me to have sufficient time for my family. F

A D 28. I feel I should specialize because considering the time and efforts expended in specialization there is greater financial reward. F

A D 29. In private practice it is an imposition to expect a physician to treat more than 10 per cent of his cases without charge. F

A D 30. At present I intend to give a few years as a medical practitioner to some underdeveloped area of the world. T

* All correct answers are indicative of "idealism." All incorrect answers are indicative of cynicism."

BIOGRAPHICAL INVENTORY

(Janet A. Taylor, "A Personality Scale of Manifest Anxiety," Journal of Abnormal Social Psychology, 48, (1953), 285-290.)

T F 1. I do not tire quickly. (False)

T F 2. I am troubled by attacks of nausea. (True)

T F 3. I believe I am more nervous than most others. (False)

T F 4. I have very few headaches. (False)

T F 5. I work under a great deal of tension. (True)

T F 6. I cannot keep my mind on one thing. (True)

T F 7. I worry over money and business. (True)

T F 8. I frequently notice my hand shakes when I try to do something. (True)

T F 9. I blush no more than others. (False)

T F 10. I have diarrhea once a month or more. (True)

T F 11. I worry quite a bit over possible misfortunes. (True)

T F 12. I practically never blush. (False)

T F 13. I am often afraid that I am going to blush. (True)

T F 14. I have nightmares every few nights. (True)

T F 15. My hands and feet are usually warm enough. (False)

T F 16. I sweat very easily even on cool days. (True)

T F 17. Sometimes when embarrassed, I break out in a sweat which annoys me greatly. (True)

T F 18. I hardly ever notice my heart pounding and I am seldom short of breath. (False)

T F 19. I feel hungry almost all the time. (True)

T F 20. I am very seldom troubled by constipation. (False)

T F 21. I have a great deal of stomach trouble. (True)

T F 22. I have periods in which I lost sleep over worry. (True)

T F 23. My sleep is restless and disturbed. (True)

T F 24. I dream frequently about things that are best kept to myself. (True)

T F 25. I am easily embarrassed. (True)

T F 26. I am more sensitive than most other people. (True)

T F 27. I frequently find myself worrying about something. (True)

T F 28. I wish I could be as happy as others seem to be. (True)

T F 29. I am usually calm and not easily upset. (False)

T F 30. I cry easily. (True)

T F 31. I feel anxiety about something or someone almost all the time. (True)

T F 32. I am happy most of the time. (False)

T F 33. It makes me nervous to have to wait. (True)

T F 34. I have periods of such great restlessness that I cannot sit long in a chair. (True)

T F 35. Sometimes I become so excited that I find it hard to get to sleep. (True)

T F 36. I have sometimes felt that difficulties were piling up so high that I could not overcome them. (True)

T F 37. I admit that I have at times been worried beyond reason over something that really did not matter. (True)

T F 38. I have very few fears compared to my friends. (False)

T F 39. I have been afraid of things or people that I know could not hurt me. (True)

T F 40. I certainly feel useless at times. (True)

T F 41. I find it hard to keep my mind on a task or job. (True)

T F 42. I am usually self-conscious. (True)

T F 43. I am inclined to take things hard. (True)

T F 44. I am a high-strung person. (True)

T F 45. Life is a strain for me much of the time. (True)

T F 46. At times I think I am no good at all. (True)

T F 47. I am certainly lacking in self-confidence. (True)

T F 48. I sometimes feel that I am about to go to pieces. (True)

T F 49. I shrink from facing a crisis or difficulty. (True)

T F 50. I am entirely self-confident. (False)

T F 51. I have difficulty eating before final examinations. (True)

T F 52. I use drugs such as benzedrine especially before big examinations. (True)

T F 53. I lose quite a bit of sleep during examinations. (True)

T F 54. I need quite a bit of reassurance from other students about my ability to pass an examination. (True)

T F 55. In parties I usually drink heavily in order to "let off steam," especially after big tests. (True)

(All correct answers are indicative of "stress and anxiety." All incorrect answers are non-indicative of "stress and anxiety.")

DIRECTIONS TO THE EXAMINEE

The following directions are read aloud to the examinee.

"Please print your name on the small blank card before you. When you have finished leave the card on the table above the other material you have before you."

PAUSE TO ALLOW EXAMINEE TIME TO WRITE HIS NAME ON THE CARD

"You are going to participate in an attitude inventory. It is not a test, so there are no right or wrong answers. This inventory attempts to discover your attitudes or opinions about certain issues in medicine and medical education. It is not different from what a pollster would do in an interview, but since there are 70 statements, which actually represent 70 questions, an interview would be extremely time consuming. This card sorting method has been devised to reduce this time factor.

Would you now casually examine some of the cards in the stack to get a "feel" of the nature of these statements."

PAUSE. ALLOW EXAMINEES ONE MINUTE TO EXAMINE THE CARDS

"After you have finished examining the cards please restack them."

PAUSE. ALLOW EXAMINEES TIME TO RESTACK THE CARDS

"You will be asked to perform several operations. First, read each statement and as you finish place it in one of the

following categories: Agree, Undecided, or Disagree. If you will look at the three heading cards before you you will find that the Agree card is to the left, Undecided in the middle and Disagree to the right, so that the cards can be placed directly below these heading cards. Therefore, if you agree with a statement place it on a pile below the card headed Agree, if you disagree with a statement place it on a pile below the card headed Disagree, and if you are undecided about a statement place it on a pile below the card headed Undecided."

"The degree of agreement or disagreement is of no concern. NO MATTER WHAT THE DEGREE OF AGREEMENT OR DISAGREEMENT MAY BE. PLACE IT ON THE APPROPRIATE FILE. This you might find difficult, but please, NO MATTER WHAT THE DEGREE OF AGREEMENT OR DISAGREEMENT MAY BE, PLACE IT ON THE APPROPRIATE PILE. Therefore, if you agree with 50.1% of the statements and disagree with 49.9% of it, for the time being place it in the agree pile. Undecided cards should be those which express an attitude or point of view with which you neither agree, or disagree. If there is even the <u>slightest amount</u> of agreement or disagreement it <u>should not</u> be placed on the Undecided pile but on the appropriate Agree or Disagree pile. I will repeat that last statement, if there is even the <u>slightest amount</u> of agreement or disagreement it <u>should not</u> be placed on the Undecided pile but on the appropriate Agree or Disagree pile.

"Do not try to get the same number of cards in each pile. They are not so arranged."

"When you have finished the sorting DO NOT LEAVE. You have one more operation to perform. Do not take too much time considering the statements and their placement. Your first impression is usually the most valid. Raise your hand when you have finished the first sort. You will then be given additional instructions."

"If there are no questions you may begin."

APPENDIX F

AN INVENTORY OF STUDENT ATTITUDES

(This Student Attitude Inventory was developed at the School of Medicine of The Medical College of Virginia. It measures specific objectives of various attitudes. Scored as: Completely Agree, Agree, Undecided, Disagree, Completely Disagree.)

1. A physican must make every effort to preserve the life of a grossly abnormal baby at birth.
2. Forceful sterilization of the mentally retarded is an act in violation of the dignity of the individual.
3. An individual cannot be judged from the amount of money he earns.
4. An unwed pregnant woman is to be respected.
5. The unconscious patient is entitled to, and should receive, the same consideration as the conscious patient.
6. Patients from lower income groups are unable to understand the nature of their illness.
7. All orientals look alike.
8. Those who accept charity lack dignity.
9. Any unmarried mothers who have more than two illegitimate children and are on public welfare should be sterilized.
10. The experimental use of potentially dangerous drugs in habitual criminals, against their will, is justifiable.
11. A physician should determine his fee in part by patients' ability to pay.
12. Patients are appreciative of sympathetic treatment on the part of the physician.
13. It is of importance for the attending physician to determine if a hospital patient has received visitors.

14. The wife of a patient who has just contracted syphilis and refuses treatment, should be informed.

15. A patient's religious beliefs should take priority in determining the nature of medical procedures.

16. The parents of an unwed pregnant girl should always be told.

17. The patient has a right to demand a specific treatment.

18. Compassion is a luxury which the busy physician cannot afford.

19. All patients that have a fatal disease should be told.

20. In dealing with patients, it is enough for the physician to advise treatment without explanations.

21. It is a community's prerogative to judge a physician's behavior.

22. Indigent patients have the same right to proper medical care as those who are able to pay.

23. The community has a right to force a patient to undergo treatment for a disease which endangers the health of the community.

24. A specialist should not handle cases the nature of which fall outside of his own field except for emergency reasons.

25. A physician who is jailed for fraudulent income tax returns, should be allowed to practice medicine again.

26. If a physician suspects one of his colleagues of faulty practice, he should advise the patient.

27. The concept that a patient has certain fundamental rights is archaic.

28. Professional mistakes of a colleague are only the concern of the profession.

29. The medical incompetence of a colleague must not be exposed to the community.

30. A physician who is a drug addict, should be removed forever from the practice of medicine.

31. In an emergency, a physician must act even if the task is outside his usual sphere of competency.

32. Our own sociological beliefs prevent us from treating a patient with complete objectivity and without bias.

33. Even though a student may cheat on examinations he can still become a competent physician.

34. Awareness of one's own religious beliefs aids a physician in the performance of his duties.

35. Saying "I don't know" is one criterion of a "good" physician.

36. A physician must imply that he knows the diagnosis in order not to destroy the patient's confidence in him.

37. In medical practice, results alone are what count.

38. In the treatment of the patient, abandonment of intellectual honesty is frequently justified.

39. Recognition of one's clinical inability or limitations is a sign of weakness.

40. Changing a diagnosis implies some "loss of face."

41. Controlled experiments are more valuable than clinical impressions.

42. In clinical medicine, research without controls is of value.

43. In medicine, research of any kind is valued out of proportion to its real worth.

44. Statistics are meaningless when applied to the individual patient.

45. All physicians, sometimes during their medical education, should be involved in some research.

46. Reviews and digests are a good substitute for original research articles.

47. The research contributions of basic medical scientists to practicing physicians is limited.

48. Psychiatry has no place in medicine because it is too unscientific.

49. The basic scientists should attempt to correlate their research to clinical medicine.

50. The bases of medicine is logic, not empiricism.

51. A patient and his family should be told if a consultant disagrees with the attending physician.

52. Even though a family physician refers his patient for an operation, his responsibility continues.

53. Drug addiction is a social problem in which the medical profession should play a key role.

54. Para-medical specialties, such as physical therapy, should be supervised by the medical profession.

55. The medical profession should be concerned with the number of marital problems that are currently prevalent in our culture.

56. An agnostic physician is relieved of the responsibility for notifying the patient's clergyman in the face of terminal illness.

57. Once a family physician refers his patient to a social agency, his responsibility ceases.

58. Problems of preventive medicine are better delegated to a consultant, since the attending physician is not primarily concerned with them.

59. Patients think less of the doctor who seeks consultation.

60. Since the physician is primarily concerned with the diagnosis and treatment of his patient's illness, he should leave emotional and socio-economic factors to better trained specialists.

61. Students who are interested in one particular field should seek opportunities to do advanced work.

62. In medical school, grades are less important than achievement.

63. Poorer students are not jeopardized by those who excel in their work.

64. Students with personal problems that effect their academic life should seek out appropriate faculty members to aid them in solving such problems.

65. Since the medical school does not provide opportunity for the "cultural" courses (literature, music, etc.) the student should make every effort to obtain this knowledge on his own.

66. A way to get through medical school is to sit in the middle of the room and say nothing.

67. Since many students standing low in their class become good physicians, average scholastic effort is acceptable.

68. Students who ask questions in class do so to impress the instructors.

69. Because of the volume of work required in medical school, a student needs only to meet the minimum requirements.

70. Anonymity aids in successfully completing medical school.

APPENDIX G

STUDENT ATTITUDE INVENTORY
SCORING SHEET

NAME OF STUDENT _____ CODE _____

OBJECTIVE _____

DATES

_____
_____
_____

STATEMENT	4 COMPLETELY AGREE	3 AGREE	2 UNDECIDED	1 DISAGREE	0 COMPLETELY DISAGREE
1					
2					
3					
4					
5					
SUB TOTAL					

STATEMENT	0 COMPLETELY AGREE	1 AGREE	2 UNDECIDED	3 DISAGREE	4 COMPLETELY DISAGREE
6					
7					
8					
9					
10					
SUB TOTAL					

SCORE _____

STUDENT ATTITUDE INVENTORY
SCORING SHEET

NAME OF STUDENT_____ CODE_____

OBJECTIVE_____

DATES

_____
_____
_____

STATEMENT	4 COMPLETELY AGREE	3 AGREE	2 UNDECIDED	1 DISAGREE	0 COMPLETELY DISAGREE
11					
12					
13					
14					
15					
SUB TOTAL					

STATEMENT	0 COMPLETELY AGREE	1 AGREE	2 UNDECIDED	3 DISAGREE	4 COMPLETELY DISAGREE
16					
17					
18					
19					
20					
SUB TOTAL					

SCORE_____

STUDENT ATTITUDE INVENTORY
SCORING SHEET

NAME OF STUDENT_____ CODE_____

OBJECTIVE_____

DATES

_____
_____
_____

STATEMENT	4 COMPLETELY AGREE	3 AGREE	2 UNDECIDED	1 DISAGREE	0 COMPLETELY DISAGREE
21					
22					
23					
24					
25					
SUB TOTAL					

STATEMENT	0 COMPLETELY AGREE	1 AGREE	2 UNDECIDED	3 DISAGREE	4 COMPLETELY DISAGREE
26					
27					
28					
29					
30					
SUB TOTAL					

SCORE_____

(40-))

STUDENT ATTITUDE INVENTORY
SCORING SHEET

NAME OF STUDENT _____ CODE _____
OBJECTIVE _____

DATES

_____
_____
_____

STATEMENT	4 COMPLETELY AGREE	3 AGREE	2 UNDECIDED	1 DISAGREE	0 COMPLETELY DISAGREE
31					
32					
33					
34					
35					
SUB TOTAL					
STATEMENT	1 COMPLETELY AGREE	2 AGREE	3 UNDECIDED	4 DISAGREE	5 COMPLETELY DISAGREE
36					
37					
38					
39					
40					
SUB TOTAL					

SCORE _____

(40))

STUDENT ATTITUDE INVENTORY
SCORING SHEET

NAME OF STUDENT _____ CODE _____

OBJECTIVE _____

DATES

_____

_____

_____

STATEMENT	4 COMPLETELY AGREE	3 AGREE	2 UNDECIDED	1 DISAGREE	0 COMPLETELY DISAGREE
41					
42					
43					
44					
45					
SUB TOTAL					

STATEMENT	0 COMPLETELY AGREE	1 AGREE	2 UNDECIDED	3 DISAGREE	4 COMPLETELY DISAGREE
46					
47					
48					
49					
50					
SUB TOTAL					

SCORE _____

(40-))

STUDENT ATTITUDE INVENTORY
SCORING SHEET

NAME OF STUDENT _____ CODE _____

OBJECTIVE _____

DATES

_____

_____

_____

STATEMENT	4 COMPLETELY AGREE	3 AGREE	2 UNDECIDED	1 DISAGREE	0 COMPLETELY DISAGREE
51					
52					
53					
54					
55					
SUB TOTAL					
STATEMNT	0 COMPLETELY AGREE	1 AGREE	2 UNDECIDED	3 DISAGREE	4 COMPLETELY DISAGREE
56					
57					
58					
59					
60					
SUB TOTAL					

SCORE _____

(40-)

STUDENT ATTITUDE INVENTORY
SCORING SHEET

NAME OF STUDENT _____ CODE _____

OBJECTIVE _____

DATES

_____

_____

_____

STATEMENT	4 COMPLETELY AGREE	3 AGREE	2 UNDECIDED	1 DISAGREE	0 COMPLETELY DISAGREE
61					
62					
63					
64					
65					
SUB TOTAL					

STATEMENT	0 COMPLETELY AGREE	1 AGREE	2 UNDECIDED	3 DISAGREE	4 COMPLETELY DISAGREE
66					
67					
68					
69					
70					
SUB TOTAL					

SCORE _____

(40-))

APPENDIX H

SCORES ON AGC, AVERAGE MCAT, AA, SA, CI AND IPA OF MEDICAL RESPONDENTS BY UPPER ONE-THIRD AA

AGC	Average MCAT	AA	SA Period I	SA Period II	SA Period III	CI Period I	CI Period II	CI Period III	IPA Period I	IPA Period II	IPA Period III
3.37	573	90.41	4	3	1	24	26	28	230	188	212
2.96	515	89.75	18	14	8	19	20	19	201	201	181
3.11	563	89.56	32	31	34	21	23	24	204	199	190
3.17	520	89.50	29	24	24	15	22	19	208	221	210
3.66	490	89.41	15	8	15	22	25	21	212	229	229
2.92	528	88.96	17	16	18	22	22	22	194	218	226
3.45	535	88.79	17	14	15	20	21	23	205	224	202
3.52	490	88.37	16	19	12	19	21	18	195	209	221
3.23	465	88.16	11	10	7	22	24	19	208	192	188
3.09	500	87.13	20	21	14	21	22	23	224	235	210
3.00	535	87.03	12	9	9	20	21	18	187	199	193
2.74	443	87.00	11	12	5	22	19	19	180	186	171
3.11	563	86.98	19	19	14	18	20	21	195	207	231

APPENDIX H Continued

SCORES ON AGC, AVERAGE MCAT, AA, SA, CI AND IPA OF MEDICAL RESPONDENTS BY UPPER ONE-THIRD AA

AGC	Average MCAT	AA	SA PERIOD I	SA PERIOD II	SA PERIOD III	CI PERIOD I	CI PERIOD II	CI PERIOD III	IPA PERIOD I	IPA PERIOD II	IPA PERIOD III
2.89	483	86.96	30	30	31	15	11	12	194	177	187
3.03	523	86.77	18	18	23	21	22	21	200	212	212
2.88	518	86.73	19	19	15	22	24	22	200	203	188
3.09	575	86.69	32	32	30	20	23	19	225	228	223
2.75	450	86.50	4	23	9	25	18	19	209	216	240
3.00	500	96.33	14	13	12	21	21	17	192	192	175
3.28	455	86.28	19	11	6	19	19	17	181	187	180
3.34	500	85.98	7	9	6	20	20	19	191	204	196
2.95	500	85.56	7	5	4	23	25	26	218	216	214
3.47	505	85.11	7	4	7	14	17	13	188	202	196
2.94	580	85.03	12	17	12	23	26	21	203	209	207
3.11	475	85.01	15	10	9	18	18	17	184	200	203
3.41	548	84.35	18	18	16	21	21	16	217	219	193
2.88	470	84.33	12	16	13	22	20	19	212	213	202
2.81	493	84.20	10	12	15	25	23	20	191	194	210

APPENDIX H

SCORES ON AGC, AVERAGE MCAT, AA, SA, CI AND IPA OF MEDICAL RESPONDENTS BY MIDDLE ONE-THIRD AA

AGC	Average MCAT	AA	SA Period I	SA Period II	SA Period III	CI Period I	CI Period II	CI Period III	IPA Period I	IPA Period II	IPA Period III
2.93	555	84.09	15	21	26	20	22	19	220	225	221
2.80	470	83.98	29	17	16	21	23	24	215	202	218
2.99	425	83.75	21	19	14	22	21	24	182	191	186
3.66	548	83.64	25	7	6	27	27	23	188	189	192
3.00	535	83.62	31	28	34	20	23	23	206	210	215
2.40	505	83.49	11	16	13	25	24	23	211	208	234
3.30	510	83.35	9	10	6	24	24	23	221	225	203
2.85	503	83.30	25	29	29	17	19	19	222	202	204
2.87	505	83.24	32	19	18	22	23	23	201	190	196
2.79	523	83.15	15	14	11	20	21	23	184	196	198
2.88	455	83.09	3	2	3	27	25	23	207	224	185
3.14	560	82.90	12	11	12	23	23	25	209	219	195
2.62	498	82.88	14	12	16	21	21	16	186	201	166
3.03	493	82.56	15	11	16	20	22	18	202	225	214

APPENDIX H Continued

SCORES ON AGC, AVERAGE MCAT, AA, SA, CI AND IPA OF MEDICAL RESPONDENTS BY MIDDLE ONE-THIRD AA

AGC	Average MCAT	AA	SA Period I	SA Period II	SA Period III	CI Period I	CI Period II	CI Period III	IPA Period I	IPA Period II	IPA Period III
3.19	575	82.22	3	6	4	25	23	27	193	231	234
3.43	568	82.20	18	13	15	21	19	16	205	197	188
3.09	663	82.07	12	1	7	19	16	16	213	201	208
2.35	513	81.92	11	8	5	19	22	21	213	223	218
3.06	470	81.86	9	6	6	19	21	20	200	205	211
2.94	495	81.84	25	34	29	22	17	15	186	185	191
3.62	448	81.81	15	13	11	27	26	26	206	194	197
3.36	475	81.33	19	13	14	21	22	19	206	196	199
3.00	478	81.32	12	11	9	19	18	17	215	223	220
3.15	500	81.23	22	14	9	20	23	19	184	199	209
3.26	505	81.01	16	13	14	21	24	23	210	216	208
2.80	540	80.86	6	10	9	21	20	20	192	207	197
2.88	450	80.84	6	8	11	22	25	21	189	207	201

APPENDIX H

SCORES ON AGC, AVERAGE MCAT, AA, SA, CI AND IPA OF MEDICAL RESPONDENTS BY LOWER ONE-THIRD AA

AGC	Average MCAT	AA	SA Period I	SA Period II	SA Period III	CI Period I	CI Period II	CI Period III	IPA Period I	IPA Period II	IPA Period III
3.15	443	80.69	13	16	19	23	23	21	221	216	230
2.88	448	80.56	5	6	11	23	26	18	190	189	179
3.44	440	80.54	15	14	5	14	18	16	174	187	185
2.90	450	80.45	13	10	9	25	25	23	184	191	199
2.63	515	80.43	23	16	18	18	24	19	179	165	162
2.87	543	80.32	24	14	8	17	20	18	197	209	203
2.56	535	80.26	4	6	3	27	26	25	183	213	201
2.80	488	80.16	6	7	5	18	23	20	205	207	213
3.51	423	79.98	29	18	16	24	23	24	217	213	200
3.00	445	79.75	18	16	19	16	20	20	173	185	183
2.75	555	79.73	11	9	12	19	18	19	174	228	210
2.98	550	79.66	9	8	5	22	21	19	213	213	221
3.14	528	79.58	17	10	9	25	25	29	225	239	228
2.81	513	79.52	13	8	13	17	22	19	197	201	189

APPENDIX H Continued

SCORES ON AGC, AVERAGE MCAT, AA, SA, CI AND IPA OF MEDICAL RESPONDENTS BY LOWER ONE-THIRD AA

AGC	Average MCAT	AA	SA Period I	SA Period II	SA Period III	CI Period I	CI Period II	CI Period III	IPA Period I	IPA Period II	IPA Period III
3.06	533	79.43	20	26	27	17	16	16	201	184	194
3.15	583	79.39	16	16	23	20	20	19	201	216	201
3.07	473	78.56	6	8	7	26	25	25	212	205	201
3.07	520	78.54	12	11	13	24	24	24	187	221	207
2.86	613	78.22	40	39	44	24	24	24	208	213	134
2.79	535	77.84	17	13	14	22	23	18	210	216	216
2.91	428	77.62	24	29	24	23	25	23	199	209	202
2.79	578	77.03	14	12	7	23	22	22	219	220	222
2.85	570	76.49	14	8	7	22	25	21	174	206	185
2.85	453	75.45	19	13	15	22	21	23	196	181	190
2.90	495	73.37	26	28	30	15	21	16	180	193	203
2.87	465	73.32	10	7	6	21	20	18	208	221	219
2.76	545	72.90	5	8	4	26	27	22	236	227	211

APPENDIX I

TABLE 1

SCORES ON AVERAGE GRADE IN COLLEGE, MEDICAL COLLEGE ADMISSION TEST, AND ACADEMIC ACHIEVEMENT FOR MEDICAL FRESHMEN IN SAMPLE BY SOCIAL CLASS I.

Average Grade in College	Medical College Admissions Test	Academic Achievement In Medical School
2.63	515	80.43
2.56	535	80.26
3.23	465	88.16
3.47	505	85.11
2.85	503	83.30
3.03	523	86.77
2.94	495	81.84
3.14	528	79.58
2.85	570	76.49
2.79	578	77.03
2.88	448	80.56
3.07	473	78.56
3.09	575	86.69
2.89	483	86.96
3.09	500	87.13
2.95	500	85.56

APPENDIX I Continued

TABLE 1

SCORES ON AVERAGE GRADE IN COLLEGE, MEDICAL COLLEGE ADMISSION TEST, AND ACADEMIC ACHIEVEMENT FOR MEDICAL FRESHMEN IN SAMPLE BY SOCIAL CLASS I.

Average Grade in College	Medical College Admissions Test	Academic Achievement In Medical School
2.40	505	83.49
2.81	513	79.52
2.85	513	81.92
2.91	428	77.62

N. 20
The Relationship of above scores are represented by Figures I - IIII.

APPENDIX I

TABLE 2

SCORES ON AVERAGE GRADE IN COLLEGE, MEDICAL COLLEGE ADMISSIONS TEST, AND ACADEMIC ACHIEVEMENT FOR MEDICAL FRESHMEN IN SAMPLE BY SOCIAL CLASS II.

Average Grade In College	Medical College Admissions Test	Academic Achievement In Medical School
3.60	448	81.81
3.26	505	81.01
2.87	465	73.32
3.66	490	89.41
3.15	500	81.28
3.44	440	80.54
2.94	580	85.03
2.88	518	86.73
3.15	443	80.69
3.11	563	86.98
2.75	555	79.73
2.88	455	82.90
3.00	445	79.75
2.62	498	82.56
3.37	573	90.41
3.15	583	79.39

APPENDIX I Continued

TABLE 2

SCORES ON AVERAGE GRADE IN COLLEGE MEDICAL COLLEGE ADMISSIONS TEST, AND ACADEMIC ACHIEVEMENT FOR MEDICAL FRESHMENT IN SAMPLE BY SOCIAL CLASS II.

Average Grade In College	Medical College Admissions Test	Academic Achievement In Medical School
3.52	490	88.37
3.19	575	82.20
2.92	528	88.96
2.88	470	84.33
3.30	510	83.35
3.00	535	83.62
2.75	450	86.50
3.11	563	89.56
2.80	480	80.16
3.28	455	86.28
2.74	443	87.50
2.79	523	83.15
2.85	453	75.45

N. 29

The Relationship of above scores are represented by Figures V - VIII.

APPENDIX I

TABLE 3

SCORES ON AVERAGE GRADE IN COLLEGE, MEDICAL COLLEGE ADMISSIONS TEST, AND ACADEMIC ACHIEVEMENT FOR MEDICAL FRESHMEN IN SAMPLE BY SOCIAL CLASS III

Average Grade In College	Medical College Admissions Test	Academic Achievement In Medical School
2.80	540	80.86
2.79	535	77.84
3.07	520	78.54
2.96	515	89.75
3.34	500	85.98
2.81	493	84.20
2.98	550	79.66
2.87	543	80.32
2.90	450	80.45
3.66	548	83.64
3.41	548	84.35
2.88	450	80.84
2.87	505	83.24
3.00	478	81.32
2.86	613	78.22
3.03	493	82.22

TABLE 3

SCORES ON AVERAGE GRADE IN COLLEGE, MEDICAL COLLEGE ADMISSIONS TEST, AND ACADEMIC ACHIEVEMENT FOR MEDICAL FRESHMEN IN SAMPLE BY SOCIAL CLASS III

Average Grade in College	Medical College Admissions Test	Academic Achievement In Medical School
3.45	535	88.79
3.36	475	81.33
3.17	520	89.50
2.80	470	83.98
3.00	485	87.03
3.00	500	86.33
2.90	495	73.37
3.06	533	79.43
2.93	555	84,09
2,99	425	83.75
3.06	470	81.86
3,11	475	85.01
3.43	568	83.09
3.09	663	82.07
3.51	423	79.98
2.76	545	72.90
3.14	560	82.88

APPENDIX J

FRESHMAN SCHEDULE
Spring Quarter

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8	Neuro-Anat. Lecture		Neuro-Anat. Lecture			
9	Neuro-Anat. Laboratory	Biostatistics Lecture	Neuro-Anat. Laboratory	Psychiatry Lecture	Neuro-Anat. Lecture	
10	Laboratory	Physiology Lecture	Laboratory	Biochemistry Lecture	Neuro-Anat. Laboratory	
11	Physiology Lecture	Correlation Clinic	Laboratory	Physiology Lecture	Laboratory	
1	Physiology Lecture	Biochemistry Lecture		Physiology Laboratory	Biochemistry Lecture	Clock Hours
2	Physiology Laboratory	Biochemistry Laboratory		Laboratory	Biochemistry Laboratory	Physio. 132 Biochem. 108 Neuro. 120 Psyc. 12
3	Laboratory	Laboratory		Laboratory	Laboratory	Clinic 12 Biostat. 12
4	Laboratory	Laboratory		Laboratory	Laboratory	Total 396

APPENDIX J

FRESHMAN SCHEDULE
Winter Quarter

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8	Gross Anat. Lecture		Gross Anat. Lecture	Physiology Lecture		
9	Gross Anat. Laboratory	Correlation Clinic	Gross Anat. Laboratory	Psychiatry Lecture	Gross Anat. Lecture	First Aid
10	Laboratory	Physiology Lecture	Laboratory	Biochemistry Lecture	Gross Anat. Laboratory	First Aid
11	Laboratory		Laboratory	Physiology Lecture	Laboratory	
1	Physiology Lecture	Biochemistry Lecture		Physiology Laboratory	Biochemistry Lecture	
2	Physiology Laboratory	Biochemistry Laboratory		Laboratory	Biochemistry Laboratory	
3	Laboratory	Laboratory		Laboratory	Laboratory	
4	Laboratory	Laboratory		Laboratory	Laboratory	

Clock Hours	
Gross	132
Phys.	138
Biochem.	108
First A.	24
Psyc.	12
Clinic	6
Total	420

APPENDIX J
FRESHMAN SCHEDULE
Fall Quarter

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8	Gross Anat. Lecture		Gross Anat. Lecture			
9	Gross Anat. Laboratory	Correlation Clinic	Gross Anat. Laboratory		Gross Anat. Lecture	
10	Laboratory	Rational Psychology	Laboratory		Gross Anat. Laboratory	
11	Laboratory		Laboratory		Laboratory	
1	Histology Lecture	Embryology Lecture	Histology Lecture	Embryology Lecture	Histology Lecture	Clock Hours
2	Histology Laboratory	Embryology Laboratory	Histology Laboratory	Embryology Laboratory	Histology Laboratory	Gross 132 Embry. 96 Histol. 150 R. Psyc. 12
3	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	Clinic 6 Total 396
4	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	

APPENDIX K

Freshman Year

Subjects	First Quarter			Second Quarter			Third Quarter			Total Hrs.
	Lect.	Lab.	Total	Lect.	Lab.	Total	Lect.	Lab.	Total	
Gross Anatomy.....	36	96	132	36	96	132	—	—	—	264
Histology.....	42	108	150	—	—	—	—	—	—	150
Embryology.....	24	72	96	—	—	—	—	—	—	96
Rational Psychology...	12	—	12	—	—	—	—	—	—	12
Biochemistry.....	—	—	—	36	72	108	36	72	108	216
Physiology.....	—	—	—	54	84	138	48	84	132	270
Neuroanatomy and Physiology.....	—	—	—	—	—	—	36	84	120	120
Clinic.....	6	—	6	6	—	6	12	—	12	24
Biostatistics.....	—	—	—	—	—	—	12	—	12	12
Psychiatry 1 & 2.....	—	—	—	12	—	12	12	—	12	24
First Aid.....	—	—	—	7	17	24	—	—	—	24
TOTALS.....	120	276	396	151	269	420	156	240	396	1212

APPENDIX L

SOPHOMORE SCHEDULE
Spring Quarter

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8				Psychiatry		
9		Phys. Diag. Practical	Clinical Lec. (Neurology)	Clinical Lecture	Clinical Lec. (Neurology)	Pathology Lecture
10		Phys. Diag. Practical	Clinical Lecture	Clinical Lecture	Clinical Lecture	Clinical Lecture
11		Phys. Diag. Practical	Pharmacology Lecture	Pathology Lecture	Pharmacology Lecture	Clinical Lecture
1	Public Health	Physical Diag. Prac.	Pharmacology Laboratory	Pathology	Clinical Lecture	
2	Field Trips	Diag. Prac.	Laboratory	Pathology	Pharmacology Lecture	
3	Field Trips	Diag. Prac.	Laboratory	Pathology	Pharmacology	
4	Field Trips	Diag. Prac.	Laboratory	Pathology	Laboratory	

Clock Hours

Path.	72
Phys. Diag.	72
Pub. Hlth.	48
Pharm.	84
Cl. Lec.	108
Psych.	12
Total	396

APPENDIX L

SOPHOMORE SCHEDULE
Winter Quarter

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8						
9	Clinical Lecture	Pharmacology Lecture	Physical Diag. Lec.	Pathology	Microbiology Lecture	Pathology
10	Clinical Lecture	Psychiatry Lecture	Phys. Diag. Practical	Pathology	10:30 Autopsy	Pathology
11	Pharmacology Lecture	Clinical Lecture	(Normal)	Pathology	C. C. H. until completed	Pathology
1		Pharmacology Laboratory		Pathology	Pathology	Clock Hours Path. 180 Pharm. 84
2	Public Health Lecture	Laboratory		Pathology	Pathology	Cl. Lec. 36 Psych. 12 Pub. Hlth. 24
3	Lecture	Laboratory		Pathology	Pathology	Phys. Diag. 36 Micro. 12
4	Pharmacology Lecture	Laboratory		Pathology	Pathology	Total 384

APPENDIX L

SOPHOMORE SCHEDULE
Fall Quarter

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8						
9	Clinical Lecture		Clinic	Pathology	Pathology	Pathology
10	Ethics Lecture		Clinical Lecture	Pathology	10:30 Autopsy C. C. H. until completed	Pathology
11	Physical Diag. Lec.		Clinical Lecture	Pathology		Pathology
1	Microbiology Lecture	Microbiology Lecture	Microbiology Lecture	Pathology		
2	Microbiology Laboratory	Microbiology Laboratory	Microbiology Laboratory	Pathology	Parasitology Lecture	
3	Laboratory	Laboratory	Laboratory	Pathology	Parasitology Laboratory	
4	Laboratory	Laboratory	Laboratory	Pathology	Laboratory	

Clock Hours	
Micro.	180
Path.	144
Clin. L.	36
Clinics	12
Ethics	12
Phy. Diag.	12
Total	396

APPENDIX M

Sophomore Year

Subjects	First Quarter			Second Quarter			Third Quarter			Total Hrs.
	Lect.	Lab.	Total	Lect.	Lab.	Total	Lect.	Lab.	Total	
Bacteriology and Immunology	36	108	144	12		12				156
Parasitology	12	24	36							36
Pathologic Anatomy and Clinical Pathology	36	108	144	36	144	180	24	48	72	396
Clinical Lectures	36	—	36	36	—	36	108	—	108	180
Psychiatry	—	—	—	12	—	12	12	—	12	24
Clinics and Seminars	12	—	12		—		—	—	—	12
Physical Diagnosis	12	—	12	12	24	36	—	72	72	120
Ethics	12	—	12	—	—	—	—	—	—	12
Preventive Medicine and Public Health	—	—	—	24	—	24	—	48	48	72
Pharmacology	—	—	—	36	48	84	36	48	84	168
TOTALS	156	240	396	168	216	384	180	216	396	1176

APPENDIX N

SUMMARY OF CURRICULUM BY HOURS

Required of All Candidates for the Degree of Doctor of Medicine

SUBJECT	LECTURE OR CONFERENCE	DEMONSTRATION OR LABORATORY	CLINICS AND CLERKSHIPS	TOTAL HOURS
Anatomy — Gross	72	192	—	264
Histology	42	108	—	150
Embryology	24	72	—	96
Neurophysiology and Neuroanatomy	36	84	—	120
Biochemistry	72	144	—	216
Bone & Joint Surgery	13	—	65	78
Dermatology & Syphilology	24	—	2	26
Medicine	102	—	1083	1185
Microbiology	60	132	—	192
Neurology & Psychiatry	N-55-P-60	—	N 15-P 239	369
Obstetrics & Gynecology	Ob 48-Gyne 39	—	178	265
Ophthalmology	12	—	17	29
Otorhinolaryngology	17	—	5	22
Pathology	96	300	—	396
Pediatrics	50	—	208	258
Pharmacology	72	96	—	168
Physical Medicine	12	—	75	87
Physiology	102	168	—	270
Preventive Medicine & Public Health	24	48	35	107
Radiology	17	—	—	17
Surgery	60	—	531	591
Urology	26	—	—	26
Miscellaneous				
Free Elective	—	—	350	350
Anesthesiology	12	—	—	12
First Aid	7	17	—	24
Medical Law	12	—	—	12
History of Medicine	12	—	—	12
Elective Preceptorship	—	—	175	175
Oncology	12	—	—	12
Medical Ethics	42	—	—	42
Rational Psychology	12	—	—	12
Biostatistics	12	—	—	12
TOTAL	1256	1361	2978	5595

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APPROVAL SHEET

The dissertation submitted by Marcel Anthony Fredericks has been read and approved by five members of the Department of Sociology.

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the dissertation is now given final approval with reference to content, form, and mechanical accuracy.

The dissertation is therefore accepted in partial fulfillment of the requirements for the Degree of Doctor of Philosophy.

Jan. 22, 1965
Date

Paul Mundy
Signature of Adviser